United States Court of Appeals

for the Second Circuit

APPENDIX

74-1629-1632

B

P/S

United States Court of Appeals

FOR THE SECOND CIRCUIT

HELLENIC LINES LIMITED,
Plaintiff-Appellant,

—against—

LIFE INSURANCE CORPORATION OF INDIA,
Defendant-Appellee.

HELLENIC LINES LIMITED,
Plaintiff-Appellant,

—against—

AETNA CASUALTY & SURETY COMPANY, *et al.*,
Defendants-Appellees.

ON APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES
FOR THE SOUTHERN DISTRICT OF NEW YORK

JOINT APPENDIX

(Volume 1—Pages 1a to 382a)

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UNITED STATES COURT OF APPEALS
FILED
APR 7 1975
A. DANIEL FUSARO, CLERK
SECOND CIRCUIT

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For Plaintiff

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Sigurd Golten
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William Carlson, Recalled
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For Defendants

Eric Swire Bates
Direct 388a
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Eric Swire Bates, Recalled
Direct 505a
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Relevant Docket Entries

71 Civ. 2865

DATE	PROCEEDINGS
June 28—71	Filed complaint and issued summons.
Sept. 17—71	Filed ANSWER of defts' to the complaint.
Oct. 5—71	Filed ANSWER of Aetna Casualty & Surety Co. to complaint.
Oct. 5—71	Filed ANSWER of Federal Insurance Co. to complaint.
Oct. 5—71	Filed ANSWER of Sea Insurance Co. Ltd. to complaint.
Oct. 5—71	Filed ANSWER of Atlantic Mutual Insurance Co. to complaint.
Oct. 5—71	Filed ANSWER of United States Fire Insurance Co. to complaint.
Feb. 22—73	Filed Deft. Great American Insurance Co.'s ANSWER, COUNTER-CLAIM and SET-OFF.
Feb. 2—73	Filed Deft. American Motorists Insurance Co.'s ANSWER, COUNTER-CLAIM, SET-OFF & RECOUPMENT.
Nov. 15—73	Filed pltff's REPLY to counterclaim of Amer. Motorists Ins. Co.
Nov. 15—73	Filed REPLY to counterclaim of Great Amer. Ins. Co.
Dec. 26—73	Filed pltf. proposed findings of fact and conclusions of law.

Relevant Docket Entries

DATE	PROCEEDINGS
Jan. 25—74	Before Griesa, J. Non-Jury trial begun.
Jan. 28—74	Trial continued.
Jan. 29—74	Trial continued.
Jan. 30—74	Trial continued.
Jan. 31—74	Trial continued; to continue in February.
Feb. 4—74	Trial continued.
Feb. 5—74	Trial continued.
Feb. 6—74	Trial continued.
Feb. 7—74	Trial continued and concluded—consent order to be submitted.
Mar. 29—74	Filed order & judgment dismissing action on the merits and that defts. recover their costs—Griesa, J.—Judgment Entered —Clerk—m.n. Ent. 4-1-74.
Mar. 29—74	Filed stip. & order of discontinuance as to counter-claims, with prejudice and without costs, as to deft. American Motorists Ins. Co. & deft. Great American Ins. Co.— Griesa, J.
Apr. 29—74	Filed notice of appeal by plaintiff from the final judgment entered in this action April 1—74, ordering that the complaint of Hellenic Lines Ltd., be dismissed on the merits without costs. m/n.

Relevant Docket Entries

DATE	PROCEEDINGS
May 28—74	Filed transcript of record of proceedings dated 1/25/74.
Jun. 10—74	Filed stipulation that certain documents shall be included in the record on appeal.
Jun. 10—74	Filed stipulation designating exhibits for the record on appeal.
Jun. 10—74	Filed notice that original record on appeal has been Certified & transmitted to USCA.
Jul. 15—74	Filed transcript of record of proceedings, dated Jan. 28, 29, 30, 31, 1974.
Jul. 15—74	Filed transcript of record of proceedings, dated Feb. 4, 5, 6, 7, 1974.

Relevant Docket Entries

71 Civ. 3221

DATE	PROCEEDINGS
Jul. 20—71	Filed complaint and issued summons.
Oct. 5—71	Filed ANSWER to complaint.
Dec. 26—73	Filed pltf. proposed findings of fact and conclusions of law.
Jan. 25—74	Before Griesa, J.—Non-Jury trial begun.
Jan. 28—74	Trial continued.
Jan. 29—74	Trial continued.
Jan. 30—74	Trial continued.
Jan. 31—74	Trial continued; to continue in February.
Feb. 4—74	Trial continued.
Feb. 5—74	Trial continued.
Feb. 6—74	Trial continued.
Feb. 7—74	Trial continued and concluded—consent order to be submitted.
Apr. 2—74	Filed Order & Judgment dismissing action on the merits, and that deft. recover costs—Griesa, J.—Judgment entered—Clerk—m.n. ent. 4-3-74.
Apr. 29—74	Filed notice of appeal by plaintiff, from the final judgment entered in this action on April 2—74, ordering that the complaint of plaintiff be dismiss (sic) on the merits with costs.

Relevant Docket Entries

DATE	PROCEEDINGS
May 28—74	Filed transcript of record of proceedings, dated 1/25/74.
Jun. 10—74	Filed stipulation that certain documents shall be included in the record on appeal.
Jun. 10—74	Filed stipulation designating exhibits for the record on appeal.
Jun. 10—74	Filed notice that original record on appeal has been Certified & transmitted to USCA.
Jul. 10—74	Filed transcript of record of proceedings, dated Jan. 25, 28, 29, 30, 31, 1974.
Jul. 10—74	Filed transcript of record of proceedings, dated Feb. 4, 5, 6, 7, 1974.

ACTION IN 71 CIV. 2865

Complaint

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

HELLENIC LINES LIMITED,

Plaintiff,

—against—

AETNA CASUALTY & SURETY COMPANY, AMERICAN MOTORISTS INSURANCE COMPANY, ATLANTIC MUTUAL INSURANCE COMPANY, FEDERAL INSURANCE COMPANY, SEA INSURANCE COMPANY LTD., PENNSYLVANIA INSURANCE COMPANY, FIREMAN'S FUND INSURANCE COMPANY, GREAT AMERICAN INSURANCE COMPANY, HARTFORD INSURANCE GROUP, HANOVER INSURANCE COMPANY, NEW HAMPSHIRE INSURANCE COMPANY, HOME INSURANCE COMPANY, INSURANCE COMPANY OF NORTH AMERICA, MARINE OFFICE—APPLETON & COX CORP., NORTHWESTERN NATIONAL INSURANCE COMPANY, ROYAL INSURANCE COMPANY, LIMITED, SAFEGUARD INSURANCE COMPANY, STANDARD MARINE INSURANCE COMPANY, LTD., SUN INSURANCE COMPANY, CAMDEN FIRE INSURANCE ASSOCIATION, ST. PAUL FIRE & MARINE INSURANCE COMPANY, INDEMNITY MARINE ASSURANCE COMPANY, LTD., EMPLOYERS LIABILITY ASSURANCE COMPANY, LTD., AMERICAN EMPLOYERS INSURANCE COMPANY, UNITED STATES FIRE INSURANCE COMPANY and UNION INSURANCE SOCIETY OF CANTON, LTD.,

Defendants.

Complaint

Plaintiff, by its attorneys Burlingham Underwood Wright White & Lord, for its complaint against the defendants alleges upon information and belief as follows:

First: This is a case of admiralty and maritime jurisdiction as appears more fully herein, and is an admiralty and maritime claim within the meaning of Rule 9(h) of the Federal Rules of Civil Procedure.

Second: At all material times hereinafter mentioned, plaintiff was and still is a corporation organized and existing under and by virtue of the laws of the Kingdom of Greece engaged in the carriage of merchandise by water for hire with an office and place of business in Piraeus, Greece, and owner of the Greek flag motor vessel HELLENIC SAILOR in the carriage of merchandise between certain United States Gulf and East Coast ports and the ports of Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong and Calcutta.

Third: At all material times the defendants were and still are marine insurance companies incorporated under the laws of the places specified in Schedule A, annexed hereto and made a part hereof, with offices and places of business within this District as set forth in said Schedule A.

Fourth: In or about the months of October-November, 1967 at New Orleans, Louisiana, Houston, Texas, Jacksonville, Florida, Savannah, Georgia, Philadelphia, Pennsylvania, and New York, New York, respectively, various shippers shipped on board the motor vessel HELLENIC SAILOR certain shipments of merchandise for transportation subject to the terms of certain bills of lading issued

to the respective shippers of said merchandise by or on behalf of plaintiff and the motor vessel HELLENIC SAILOR.

Fifth: Each of said bills of lading provided in part:

"In case of accident, danger, damage or disaster before or after commencement of the voyage resulting from any cause whatever, whether due to negligence or not for which, or for the consequences of which, the carrier is not responsible by statute, contract or otherwise, the goods, their owners or shippers shall contribute with the carrier in General Average to the payment of any sacrifices, losses or expenses of a General Average nature that may be made or incurred and shall pay salvage and special charges incurred in respect to the goods. If the salving ship is owned or operated by the carrier, salvage shall be paid so fully as if the salving ship was owned or operated by strangers. General Average shall be adjusted, stated and settled in any port or place elected by the carrier and according to York/Antwerp Rules 1950, except Rule 22 thereof. The General Average statement in every instance shall be prepared by average adjustors selected by the carrier. In average adjustments, disbursements in foreign currency shall be exchanged into any currency at the carrier's option at the rate prevailing at time of payment and allowances for damage to cargo claimed in foreign currency shall be converted at the rate prevailing on the last day of discharge at the port of final discharge of such damaged cargo. Such deposit, agreement or other security as the carrier or his agents may consider requisite to cover the esti-

mated contribution of the goods and any salvage and special charges thereon shall be made by the goods or shippers to the carrier, if required, before delivery. Any deposits shall be payable at carrier's option in the currency indicated on each occasion by the carrier pending settlement of the General Average. Refunds of credit balance shall be paid in the same currency. It is understood that in every instance the shipper shall remain responsible until the statement of average has been settled. * * * "

Sixth: On October 31, 1967 the HELLENIC SAILOR, partially laden with cargo destined for certain of the ports referred to in paragraph Second hereof, grounded while leaving New Orleans, after which she proceeded on her voyage via Houston, Jacksonville, Savannah, Philadelphia and New York where additional cargo was loaded. Thereafter on December 24, 1967, while engaged in performing the voyage contemplated and called for by said bills of lading, when the HELLENIC SAILOR was approximately 120 miles North Northeast of Massawa, said motor vessel's main engine was stopped due to heavy vibrations. Thereupon it was found that the No. 2 afterside rod crank shaft web was fractured, it was not possible by the means available on the vessel to restore operation of the main engine, and the vessel drifted.

Seventh: As a result of events hereinbefore set forth certain sacrifices, losses and expenses of a General Average nature as well as salvage and special charges in respect of the goods on board said vessel were made or incurred by plaintiff for the common benefit and safety and preserva-

tion of the ship and her cargo, and for the completion of the common venture.

Under the terms of the aforesaid bills of lading plaintiff was entitled to, and did declare a General Average and the aforesaid goods and the shippers or owners thereof became liable to contribute with plaintiff in General Average and to pay salvage and special charges incurred in respect of their respective goods, the claims for which constituted a lien on said goods.

Eighth: Defendants each insured certain shipments, identified in Schedule B annexed hereto and made a part hereof, which were among those shipped on board the HELLENIC SAILOR as hereinbefore alleged, and pursuant to their respective contracts of insurance each of said defendants became liable to pay general average contributions, salvage and special charges in respect of the goods which they respectively insured.

Prior to delivery of said goods and in consideration of plaintiff's permitting delivery at destination thereof free and clear from its aforesaid lien thereon and without requiring a cash deposit, each of said defendants guaranteed payment of all General Average, salvage and special charges for which the goods insured by it should be liable and in consideration of such guarantees, plaintiff delivered said goods without exercise of it aforesaid lien and without requiring any cash deposit.

Ninth: Thereafter pursuant to and in accordance with the terms of the aforesaid bills of lading, Despard International, Inc., average adjusters at the Port of New York, adjusted the average and prepared a statement of general

average dated November 15, 1970. Said general average statement was duly prepared in accordance with the applicable provisions of the respective bills of lading and correctly set forth in detail the interests involved, stating and apportioning all charges among the various interests at risk. A copy of said general average statement was delivered to each of the defendants and/or its representatives prior to the commencement of this suit.

Tenth: As appears from the general average statement the amounts due from each of the defendants for general average contributions, salvage and special charges, are as follows:

Aetna Casualty & Surety Company

Interest No. 32	$ 8.66	
Interest No. 50	60.29	
Interest No. 124	780.88	
Interest No. 183	2.93	
Interest No. 334	206.76	
Interest No. 352	26.08	
Interest No. 513	8.71	
Interest No. 524	261.14	
Interest No. 528	331.60	
Interest No. 587	12.80	
Interest No. 618	43.49	
Interest No. 623	13.93	
Interest No. 624	9.80	
Interest No. 625	64.81	
Interest No. 626	21.98	
Interest No. 656	64.83	
Interest No. 657	9.04	
Total		$1,927.73

American Motorist Insurance Company

Interest No. 10	$ 306.68	
Interest No. 14	309.72	
Interest No. 104	24.48	
Interest No. 155	12.82	
Interest No. 195	10.87	
Interest No. 417	42.91	
Total		707.48

Atlantic Mutual Insurance Company

Interest No. 16	$ 835.70
Interest No. 17	387.66
Interest No. 31	497.80
Interest No. 36	57.99
Interest No. 49	83.55
Interest No. 63	74.80
Interest No. 91	107.34
Interest No. 105	631.83
Interest No. 111	281.62
Interest No. 377	65.30
Interest No. 384	3.86
Interest No. 408	55.10
Interest No. 437	56.36
Interest No. 438	903.51
Interest No. 496	9.05
Interest No. 499	8.32
Interest No. 504	13.36
Interest No. 510	20.00
Interest No. 511	9.04
Interest No. 523	159.43
Interest No. 526	93.30

Atlantic Mutual Insurance Company—Continued

Interest No. 540	46.28	
Interest No. 614	7.10	
Interest No. 634	59.79	
Interest No. 637	4.88	
Interest No. 653	1,238.25	
Interest No. 654	786.22	
Total		$6,497.44

(Chubb & Son, Inc., Mgrs.)

Federal Insurance Company

Interest No. 33	$ 15.64	
Interest No. 100	73.20	
Interest No. 502	152.15	
Interest No. 512	10.30	
Interest No. 516	14.32	
Interest No. 537	232.29	
Interest No. 538	115.60	
Interest No. 577	25.04	
Interest No. 655	10.46	
Total		$ 649.00

Sea Insurance Co. Ltd.

Interest No. 67	$ 160.47	
Interest No. 400	5.44	
Interest No. 615	5.56	
Interest No. 621	54.81	
Total		$ 226.28

(Commercial Union Insurance Group)

Pennsylvania Insurance Company

Interest No. 25	$ 161.35	
Interest No. 52	164.13	
Interest No. 138	79.63	
Interest No. 142	20.16	
Interest No. 320	10.69	
Total		$ 435.96

Fireman's Fund Insurance Company

Interest No. 1	$ 89.90
Interest No. 459	54.35
Interest No. 7	34.35
Interest No. 15	101.50
Interest No. 141	10.26
Interest No. 185	5.18
Interest No. 291	6.63
Interest No. 292	53.15
Interest No. 576	63.40
Interest No. 635	12.17
Interest No. 675	3.35
Interest No. 423	207.88
Interest No. 40	20.23
Interest No. 47	17.65
Interest No. 123	6.32
Interest No. 133	67.43
Interest No. 134	83.73
Interest No. 473	494.90
Interest No. 539	20.25
Interest No. 556	84.07

Fireman's Fund Insurance Company—Continued

Interest No. 578	255.08	
Interest No. 579	317.53	
Interest No. 580	108.90	
Interest No. 581	41.56	
Interest No. 582	112.73	
Interest No. 639	16.19	
Interest No. 650	35.07	
Total		$2,323.76

Great American Insurance Company

Interest No. 12	$ 42.61	
Interest No. 13	53.70	
Interest No. 19	181.62	
Interest No. 81	1,508.28	
Interest No. 673	7.40	
Total		$1,793.61

Hartford Insurance Group

Interest No. 430	$ 24.84	
Interest No. 21	11.70	
Interest No. 37	148.77	
Interest No. 45	4.51	
Interest No. 70	955.82	
Interest No. 86	146.60	
Interest No. 439	48.11	
Interest No. 440	101.99	
Interest No. 441	18.60	
Interest No. 442	52.60	
Interest No. 443	123.16	

Hartford Insurance Group—Continued

Interest No. 444	115.47	
Interest No. 445	13.49	
Interest No. 446	71.21	
Interest No. 447	8.34	
Interest No. 448	21.17	
Interest No. 449	35.92	
Interest No. 450	94.94	
Interest No. 451	80.19	
Interest No. 452	94.30	
Interest No. 453	543.95	
Interest No. 454	101.99	
Total		$2,817.67

(American International Underwriters Corp., Mgrs.)

Hanover Insurance Company

Interest No. 162	$ 627.49	
Interest No. 163	117.12	
Interest No. 165	462.73	
Interest No. 170	7.47	
Interest No. 171	121.28	
Interest No. 311	26.27	
Interest No. 335	3,137.25	
Interest No. 336	549.85	
Interest No. 349	519.76	
Interest No. 686	155.31	
Total		$5,724.53

New Hampshire Insurance Company

Interest No. 238	$ 55.32	
Interest No. 314	14.58	
Total		$ 69.90

Home Insurance Company

Interest No. 118	$ 101.44
Interest No. 198	9.80
Interest No. 199	9.19
Interest No. 200	10.33
Interest No. 201	10.10
Interest No. 202	9.80
Interest No. 203	9.34
Interest No. 205	9.80
Interest No. 206	9.80
Interest No. 207	3.97
Interest No. 208	9.79
Interest No. 209	3.84
Interest No. 210	4.38
Interest No. 211	9.65
Interest No. 212	8.96
Interest No. 213	9.80
Interest No. 214	9.04
Interest No. 216	10.01
Interest No. 218	9.80
Interest No. 219	9.35
Interest No. 220	21.55
Interest No. 221	7.02
Interest No. 222	9.80
Interest No. 293	9.80
Interest No. 294	9.80
Interest No. 295	7.43

Home Insurance Company—Continued

Interest No. 436	37.18	
Interest No. 492	11.68	
Interest No. 525	2.85	
Interest No. 544	41.71	
Interest No. 698	85.07	
Total		$ 512.08

Insurance Company of North America

Interest No. 474	$ 5.96	
Interest No. 699	143.62	
Interest No. 700	77.56	
Interest No. 23	298.18	
Interest No. 55	4.45	
Interest No. 92	33.79	
Interest No. 93	146.54	
Interest No. 112	66.42	
Interest No. 117	20.57	
Interest No. 127	17.43	
Interest No. 196	25.76	
Interest No. 380	44.19	
Interest No. 383	12.16	
Interest No. 409	2,743.84	
Interest No. 421	45.05	
Interest No. 424	33.16	
Interest No. 518	70.04	
Interest No. 532	18.17	
Interest No. 533	10.40	
Interest No. 558	20.43	
Interest No. 570	129.72	
Interest No. 627	9.50	
Total		$3,976.94

Marine Office—Appleton & Cox Corp.

Interest No. 46	$ 415.77
Interest No. 63	74.80
Interest No. 66	144.13
Interest No. 77	921.37
Interest No. 80	1,318.86
Interest No. 228	14.71
Interest No. 279	23.04
Interest No. 413	37.77
Interest No. 416	7.32
Interest No. 435	1.10
Interest No. 497	17.90
Interest No. 505	55.68
Interest No. 508	11.34
Interest No. 520	97.43
Interest No. 531	13.97
Interest No. 534	.10
Interest No. 541	25.05
Interest No. 564	12.84
Interest No. 575	19.14
Interest No. 588	65.68
Interest No. 589	10.89
Interest No. 590	15.05
Interest No. 593	3.66
Interest No. 594	4.00
Interest No. 595	4.05
Interest No. 596	.86
Interest No. 597	40.37
Interest No. 598	50.11
Interest No. 599	4.17

Marine Office—Appleton & Cox Corp.—Continued

Interest No. 600	3.59	
Interest No. 601	8.81	
Interest No. 602	4.99	
Interest No. 603	22.80	
Interest No. 604	4.87	
Interest No. 605	17.14	
Interest No. 607	30.24	
Interest No. 628	18.41	
Interest No. 629	44.54	
Interest No. 630	11.51	
Interest No. 636	15.28	
Interest No. 638	13.47	
Interest No. 645	15.50	
Interest No. 661	11.31	
Interest No. 663	4.35	
Interest No. 697	12.57	
Interest No. 397	56.45	
Interest No. 398	72.18	
Interest No. 399	48.12	
Interest No. 426	24.06	
Interest No. 427	72.18	
Interest No. 356	140.89	
Interest No. 357	288.41	
Interest No. 366	83.38	
Interest No. 559	15.68	
Interest No. 651	23.16	
Interest No. 652	36.62	
Total		$4,511.67

Northwestern National Insurance Co.

Interest No. 146	$ 8.51	
Interest No. 407	31.17	
Total		$ 39.68

Royal Insurance Company Limited

Interest No. 178	$ 21.44	
Interest No. 298	17.48	
Interest No. 382	124.82	
Interest No. 411	271.65	
Interest No. 462	323.03	
Interest No. 463	146.62	
Interest No. 464	332.06	
Interest No. 467	221.87	
Interest No. 617	6.26	
Interest No. 619	33.68	
Interest No. 660	22.08	
Total		$1,520.99

(W. J. Roberts & Co., Inc., Mgrs.)

Safeguard Insurance Co.

Interest No. 406	$ 2.59	
Total		$ 2.59

Standard Marine Insurance Company Ltd.

Interest No. 84	$ 300.53	
Interest No. 102	37.24	
Interest No. 145	63.87	
Interest No. 172	10.29	
Interest No. 192	10.76	
Interest No. 232	14.38	
Interest No. 515	10.26	
Interest No. 535	6.40	
Interest No. 693	105.13	
Total		$ 558.86

(Wm. H. McGee & Co., Inc., Mgrs.)

Sun Insurance Company

Interest No. 552	$ 8.87	
Total		$ 8.87

Camden Fire Insurance Association

Interest No. 646	$ 37.70	
Interest No. 647	378.38	
Interest No. 649	320.38	
Interest No. 659	47.34	
Total		$ 783.80

St. Paul Fire & Marine Insurance Company

Interest No. 97	$ 23.06	
Interest No. 114	11.64	
Interest No. 143	2.14	
Interest No. 147	13.39	
Interest No. 233	9.95	
Interest No. 281	7.10	
Interest No. 287	9.95	
Interest No. 304	9.95	
Interest No. 351	9.95	
Interest No. 402	16.03	
Interest No. 458	36.49	
Interest No. 529	71.01	
Interest No. 572	93.84	
Interest No. 584	75.57	
Interest No. 608	12.39	
Interest No. 609	15.25	
Interest No. 632	23.14	
Interest No. 633	26.86	
Total		$ 477.66

Indemnity Marine Assurance Co. Ltd.

Interest No. 96	$2,137.76	
Total		$2,137.76

Employers Liability Assurance Co. Ltd.

Interest No. 184	$ 20.73	
Total		$ 20.73

American Employers Insurance Company

Interest No. 471	$ 14.35	
Total		$ 14.35

United States Fire Insurance Company

Interest No. 58	$ 692.63	
Interest No. 59	582.67	
Interest No. 695	17.99	
Total		$1,293.29

Union Insurance Society of Canton, Ltd.

Interest No. 557	$1,177.63	
Total		$1,177.63

Eleventh: Said amounts have been duly demanded from the respective defendants but no part thereof has been paid.

WHEREFORE, the plaintiff demands judgment against each of said defendants in the amount of its contributions in general average and for salvage and special charges as claimed in this complaint, together with interest and costs, and that plaintiff have such other, further and different relief as may be just and proper.

Dated: New York, New York
June 28, 1971

BURLINGHAM UNDERWOOD WRIGHT
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SCHEDULE A ANNEXED TO COMPLAINT

This schedule consists of a list of defendants, their places of incorporation and their New York City addresses.

SCHEDULE B ANNEXED TO COMPLAINT

This schedule is made up of the defendants who insured certain shipments transported on Board the HELLENIC SAILOR and itemizes the port of shipment, destination, bill of lading number and the general average interest number of each shipment at issue in this litigation.

Both schedules are dispensed with in the interest of economy.

Answer of Aetna Casualty & Surety Co.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

Defendant, AETNA CASUALTY & SURETY COMPANY, by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff herein alleges upon information and belief.

First: Admits the allegations contained in paragraph "FIRST."

Second: Admits the allegations contained in paragraph "SECOND."

Third: Admits so much of the allegation in paragraph "THIRD" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "FOURTH."

Fifth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "FIFTH."

Sixth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "SIXTH."

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "SEVENTH."

Eighth: Admits insuring certain shipments carried on board the HELLENIC SAILOR and agreeing to pay all proper General Average charges in exchange for delivery of the said shipments but except as is so specifically admitted denies the allegations in paragraph "EIGHTH."

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International, Inc. but except as is so specifically admitted denies the allegations in paragraph "NINTH."

Tenth: Denies the allegations in paragraph "TENTH."

Eleventh: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "ELEVENTH."

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, Defendant, Aetna Casualty & Surety Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Twelfth: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer of Aetna Casualty & Surety Co.

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Aetna Casualty & Surety Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Thirteenth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

WHEREFORE, defendant, Aetna Casualty & Surety Company, prays that the complaint of the plaintiff be dismissed as against it with costs, and that it may have such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH

By: DAVID L. MALOOF
Attorneys for Defendant
161 William Street
New York, N. Y. 10038
964-3553

To:

BURLINGHAM UNDERWOOD WRIGHT WHITE & LORD
Attorneys for Defendants
25 Broadway
New York, New York 10004
HA 2-7585

Answer of Atlantic Mutual Insurance Co.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ 2865

[CAPTION OMITTED]

Defendant, ATLANTIC MUTUAL INSURANCE COMPANY, by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff herein alleges upon information and belief:

First: Admits the allegations contained in paragraph "First".

Second: Admits the allegations contained in paragraph "Second".

Third: Admits so much of the allegation in paragraph "Third" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "Fourth".

Fifth: Denies knowledge or information sufficient to form a belief as to the allegation in paragraph "Fifth".

Sixth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "Sixth".

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "Seventh".

Answer of Atlantic Mutual Insurance Co.

Eighth: Admits insuring certain shipments carried on board the HELLENIC SAILOR and agreeing to pay proper General Average charges in exchange for delivery of the said shipments but except as is so specifically admitted denies the allegations in paragraph "Eighth".

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International, Inc. but except as is so specifically admitted denies the allegations in paragraph "Ninth".

Tenth: Denies the allegations in paragraph "Tenth".

Eleventh: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "Eleventh".

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Atlantic Mutual Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Twelfth: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer of Atlantic Mutual Insurance Co.

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant Atlantic Mutual Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Thirteenth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

WHEREFORE, defendant, Atlantic Mutual Insurance Company, prays that the complaint of the plaintiff be dismissed as against it with costs, and that it may have such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH

By: DAVID L. MALOOF
Attorneys for Defendant
161 William Street
New York, New York 10038
964-3553

To:

BURLINGHAM UNDERWOOD WRIGHT WHITE & LORD
Attorneys for Plaintiff
25 Broadway
New York, N. Y. 10004
HA 2-7585

Answer of Federal Insurance Co.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ 2865

[CAPTION OMITTED]

Defendant, FEDERAL INSURANCE COMPANY, by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff herein alleges upon information and belief:

First: Admits the allegations contained in paragraph "First".

Second: Admits the allegations contained in paragraph "Second".

Third: Admits so much of the allegation in paragraph "Third" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "Fourth".

Fifth: Denies knowledge or information sufficient to form a belief as to the allegation in paragraph "Fifth".

Sixth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "Sixth".

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "Seventh".

Eighth: Admits insuring certain shipments carried on board the HELLENIC SAILOR and agreeing to pay all proper General Average charges in exchange for delivery of the said shipments but except as is so specifically admitted denies the allegations in paragraph "Eighth".

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International, Inc. but except as is so specifically admitted denies the allegations in paragraph "Ninth".

Tenth: Denies the allegations in paragraph "Tenth".

Eleventh: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "Eleventh".

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Federal Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Twelfth: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer of Federal Insurance Co.

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Federal Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Thirteenth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

WHEREFORE, defendant, Federal Insurance Company, prays that the complaint of the plaintiff be dismissed as against it with costs, and that it may have such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH

By: DAVID L. MALOOF
Attorneys for Defendant
161 William Street
New York, New York 10038
964-3553

To:

BURLINGHAM, UNDERWOOD, WRIGHT, WHITE & LORD
Attorneys for Plaintiff
25 Broadway
New York, New York 10004

Answer of Sea Insurance Co., Ltd.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ 2865

[CAPTION OMITTED]

Defendant, SEA INSURANCE COMPANY, LTD., by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff herein alleges upon information and belief:

First: Admits the allegations contained in paragraph "First".

Second: Admits the allegations contained in paragraph "Second".

Third: Admits so much of the allegation in paragraph "Third" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "Fourth".

Fifth: Denies knowledge or information sufficient to form a belief as to the allegation in paragraph "Fifth".

Sixth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "Sixth".

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "Seventh".

Answer of Sea Insurance Co., Ltd.

Eighth: Admits insuring certain shipments carried on board the HELLENIC SAILOR and agreeing to pay all proper General Average charges in exchange for delivery of the said shipments but except as is so specifically admitted denies the allegations in paragraph "Eighth".

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International, Inc. but except as is so specifically admitted denies the allegations in paragraph "Ninth".

Tenth: Denies the allegations in paragraph "Tenth".

Eleventh: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "Eleventh".

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Sea Insurance Company, Ltd., by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Twelfth: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer of Sea Insurance Co., Ltd.

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Sea Insurance Company, Ltd., by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Thirteenth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

WHEREFORE, defendant, Sea Insurance Company, Ltd., prays that the complaint of the plaintiff be dismissed as against it with costs, and that it may have such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH

By: DAVID L. MALOOF
Attorneys for Defendant
161 William Street
New York, N. Y. 10038
964-3553

To:

BURLINGHAM UNDERWOOD WRIGHT WHITE & LORD
Attorneys for Plaintiff
25 Broadway
New York, N. Y. 10004

Answer of United States Fire Insurance Co.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

Defendant, UNITED STATES FIRE INSURANCE COMPANY, by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff herein alleges upon information and belief:

First: Admits the allegations contained in paragraph "FIRST".

Second: Admits the allegations contained in paragraph "SECOND".

Third: Admits so much of the allegation in paragraph "THIRD" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "FOURTH".

Fifth: Denies knowledge or information sufficient to form a belief as to the allegation in paragraph "FIFTH".

Sixth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "SIXTH".

Answer of United States Fire Insurance Co.

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "SEVENTH".

Eighth: Admits insuring certain shipments carried on board the HELLENIC SAILOR and agreeing to pay all proper General Average charges in exchange for delivery of the said shipments but except as is so specifically admitted denies the allegations in paragraph "EIGHTH".

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International, Inc. but except as is so specifically admitted denies the allegations in paragraph "NINTH".

Tenth: Denies the allegations in paragraph "TENTH".

Eleventh: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "ELEVENTH".

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, United States Fire Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Twelfth: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer of United States Fire Insurance Co.

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, United States Fire Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Thirteenth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

WHEREFORE, defendant, United States Fire Insurance Company, prays that the complaint of the plaintiff be dismissed as against it with costs, and that it may have such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH

By: DAVID L. MALOOF
Attorneys for Defendant
161 William Street
New York, N. Y. 10038
964-3553

To:

BURLINGHAM, UNDERWOOD, WRIGHT,
WHITE & LORD
Attorneys for Plaintiff
25 Broadway
New York, New York 10004

Answer of Pennsylvania Insurance Co., et al.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

Defendants, PENNSYLVANIA INSURANCE COMPANY, FIREMAN'S FUND INSURANCE COMPANY, HARTFORD INSURANCE GROUP, HANOVER INSURANCE COMPANY, NEW HAMPSHIRE INSURANCE COMPANY, HOME INSURANCE COMPANY, INSURANCE COMPANY OF NORTH AMERICA, MARINE OFFICE—APPLETON & COX CORP., NORTHWESTERN NATIONAL INSURANCE COMPANY, ROYAL INSURANCE COMPANY, LIMITED, SAFEGUARD INSURANCE COMPANY, STANDARD MARINE INSURANCE COMPANY, LTD., SUN INSURANCE COMPANY, CAMDEN FIRE INSURANCE ASSOCIATION, ST. PAUL FIRE & MARINE INSURANCE COMPANY, INDEMNITY MARINE ASSURANCE COMPANY, LTD., and UNION INSURANCE SOCIETY OF CANTON, LTD., and also Defendants herein, if any, who in addition to the above are represented by AMERICAN INTERNATIONAL UNDERWRITERS, HOME INSURANCE COMPANY, FIREMAN'S FUND INSURANCE COMPANY, COMMERCIAL UNION INSURANCE COMPANY, TALBOT BIRD & CO., INC., ROYAL GLOBE INSURANCE GROUP, MARINE OFFICE—APPLETON & COX, INC., WILLIAM H. MCGEE & CO., INC. and/or W. J. ROBERTS & CO. for their Answer to the Complaint, herein allege by their attorneys, Hill, Rivkins, Warburton, McGowan & Carey, upon information and belief, as follows:

Answer of Pennsylvania Insurance Co., et al.

First: They deny the allegations of the First Article of the Complaint.

Second: They deny the allegations of the Second Article of the Complaint and put the Plaintiff to its proof with respect thereto.

Third: Due to refusal of Plaintiff to extend Defendants time to investigate and answer, on information and belief, they deny each and every allegation of the Third Article of the Complaint and put Plaintiff to its proof, except that they admit the named defendants are marine insurance companies.

Fourth: Due to refusal of Plaintiff to extend the time for Defendants to investigate and to prepare answer, Defendants, on information and belief, deny each and every allegation of the Fourth Article of the Complaint, and put Plaintiff to its proof.

Fifth: They deny each and every allegation of the Fifth Article of the Complaint.

Sixth: They admit that on or about October 31, 1967 the HELLENIC SAILOR was grounded in the vicinity of New Orleans, and that thereafter she loaded cargo at Houston, Jacksonville, Savannah, Philadelphia and New York, and that thereafter her engines stopped, and she drifted. Except as so admitted, they deny each and every other allegation of the Sixth Article of the Complaint.

Seventh: They admit that a General Average was declared, and they deny each and every other allegation to the Seventh Article of the Complaint.

Eighth: In view of Plaintiff's refusal to extend the time for Defendants to investigate and answer, they deny each and every allegation of the Eighth Article of the Complaint and put Plaintiff to its proof with respect thereto.

Ninth: They admit that a General Average Statement was prepared and deny each and every other allegation of the Ninth Article of the Complaint.

Tenth: They deny that the amounts set forth in the Tenth Article of the Complaint are due from the Defendants as alleged.

Eleventh: They admit non-payment and deny each and every other allegation of the Eleventh Article of the Complaint.

As and for Their First Affirmative Defense to the Complaint Herein, the Above Named Defendants Allege, on Information and Belief, by Their Attorneys, Hill, Rivkins, Warburton, McGowan & Carey, as Follows:

Twelfth: On information and belief, any sacrifices, damages, losses, charges, expenses, salvage charges or special charges whether of a general average nature and/or with respect to salvage or otherwise, incurred by the Plaintiff in connection with the matters set forth in the Complaint were due entirely to the negligent privity, knowledge, want of due diligence and negligent acts by the Plaintiff and/or Plaintiff's Managing Agents, with respect to all and any of which Plaintiff is not excused by statute, valid contract or otherwise, and Defendants are not liable therefor herein.

As and for Their Second Affirmative Defense to the Complaint Herein, the Above Named Defendants Allege, on Information and Belief, by Their Attorneys, Hill, Rivkins, Warburton, McGowan & Carey, as Follows:

Thirteenth: They repeat and reallege each and every allegation of the "TWELFTH" Article of the Answer.

Fourteenth: The HELLENIC SAILOR was unseaworthy at the time Defendants' cargoes were loaded aboard the HELLENIC SAILOR and at the time when the voyage commenced as to them and she was unseaworthy at those times due to the lack of due diligence, the privity and knowledge, and the gross negligence of the carrier, the owner, and the Plaintiff in failing to use due diligence to make the ship seaworthy, to see that she was properly manned, equipped and supplied, and that she was fit and safe for the reception and carriage of cargoes, for all and any of which Plaintiff is not excused by statute, valid contract, or otherwise, and said Defendants are not liable herein for the amounts claimed in the Complaint.

As and for Their Third Affirmative Defense, to the Complaint Herein, the Above Named Defendants Allege, on Information and Belief, by their Attorneys, Hill, Rivkins, Warburton, McGowan & Carey, as Follows:

Fifteenth: They repeat and reallege the allegations of paragraphs numbered "TWELFTH" and "FOURTEENTH" hereof.

Sixteenth: Any sacrifices, losses and expenses of a general average nature or otherwise, and salvage expenses or charges and special charges incurred by the Plaintiff in connection with the accident referred to in the Complaint were due to the gross negligence of the ship owner, the ship operator and/or her managing agents in failing before loading Defendants' cargoes, to put the HELLENIC SAILOR on drydock after she went aground near New Orleans, and in failure to arrange a complete inspection of her propeller, rudder, crankshaft and appurtenances, and in failure to make proper tests and inspections and in failure to discover her wholly unseaworthy condition as to her crankshaft and her main engines, which condition eventually made it impossible to restore the vessel to operation during her voyage, all of which inspection, drydocking, testing and discovery of the unseaworthy condition should, could and would have been accomplished and discovered prior to the loading of Defendants' cargo aboard the said HELLENIC SAILOR if due diligence had been exercised, and for the results of said failures and want of due diligence Plaintiff is not excused by any statute or valid contractual provision or otherwise and, therefore, Defendants are not liable herein to make any contribution to the Plaintiff for expenses, damages, charges, losses or sacrifices resulting from the situation of the Plaintiff and the HELLENIC SAILOR as alleged in the Complaint.

WHEREFORE, Defendants above named demand judgment dismissing the Complaint, together with interest, costs and attorneys' fees.

HILL, RIVKINS, WARBURTON, McGOWAN & CAREY

By ALLAN B. LUTZ
Attorneys for the Defendants above named
Office & P. O. Address
96 Fulton Street
New York, New York 10038
Tel. No. 233-6171

Dated: New York, New York
September 17, 1971

Answer, Counterclaim, Set-Off and Recoupment of American Motorists Insurance Co.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

Defendant, AMERICAN MOTORISTS INSURANCE COMPANY, by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff herein alleges upon information and belief:

First: Admits the allegations contained in paragraph "FIRST".

Second: Admits the allegations contained in paragraph "SECOND".

Third: Admits so much of the allegation in paragraph "THIRD" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "FOURTH".

Fifth: Denies knowledge or information sufficient to form a belief as to the allegation in paragraph "FIFTH".

Sixth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "SIXTH".

Answer, Counterclaim, Set-Off and Recoupment of American Motorists Insurance Co.

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "SEVENTH".

Eighth: Admits insuring certain shipments carried on board the HELLENIC SAILOR and agreeing to pay all proper General Average charges in exchange for delivery of the said shipments but except as is so specifically admitted denies the allegations in paragraph "EIGHTH".

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International Inc. but except as is so specifically admitted denies the allegations in paragraph "NINTH".

Tenth: Denies the allegations in paragraph "TENTH".

Eleventh: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "ELEVENTH".

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, American Motorists Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Twelfth: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer, Counterclaim, Set-Off and Recoupment of American Motorists Insurance Co.

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, American Motorists Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Thirteenth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

As and for a Counter-Claim Against Plaintiff Herein, Defendant, American Motorists Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Fourteenth: The shipment insured by it and referred to in Schedule "B" of the Complaint as "Interest No. 10" was caused to become short and damaged while in the care and custody of the plaintiff all as the result of plaintiff's violation of the contract of carriage.

Fifteenth: By virtue of its payment in the sum of $559.17 to Nasir Sanusi Al Baghdadi, this defendant has become subrogated to all rights against plaintiff arising out of the matters alleged in paragraph "FOURTEENTH" hereof.

Sixteenth: This defendant has demanded of plaintiff the value of the cargo delivered short and damaged and plaintiff has refused to pay said claim in consequence of which plaintiff is indebted to this defendant in the amount of $493.30.

Answer, Counterclaim, Set-Off and Recoupment of American Motorists Insurance Co.

As and for a Set-Off or Recoupment to Plaintiff's Claim Defendant, American Motorists Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Seventeenth: The shipment insured by it and referred to in Schedule "B" of the Complaint as "Interest No. 14" was caused to become short while in the custody of the plaintiff all as the result of plaintiff's violation of the contract of carriage.

Eighteenth: By virtue of its payment of the sum of $167.11 to Ebrahim Yousuf Akbar Alireza & Sons and has become subrogated to all rights against plaintiff arising out of the matters alleged in paragraph "SEVENTEENTH."

Nineteenth: Should plaintiff be entitled to recover of this defendant on account of the matters alleged in the Complaint which defendant denies, such recovery should be reduced by the amount of $128.16 by way of set-off or recoupment.

WHEREFORE, defendant American Motorists Insurance Company, prays for judgment in its favor against plaintiff dismissing the Complaint of plaintiff herein and awarding it the sum of $493.30 plus interest and costs of this action or in the alternative, should this Court find for plaintiff on its claim for general average contributions, then defendant prays for judgment in its favor against plaintiff or its counterclaim in the amount of $493.30 plus interest and costs, together with a reduction in plaintiff's recovery

by the amount of $128.16 by way of set-off or recoupment and for such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH
Attorneys for Defendant American Motorists Insurance Company

By: DONALD M. KENNEDY
A Member of the Firm
161 William Street
New York, N. Y. 10038
964-3553

To:

BURLINGHAM UNDERWOOD & LORD
Attorneys for Plaintiff
25 Broadway
New York, N. Y. 10004
422-7585

Answer, Counterclaim and Set-Off of Great American Insurance Co.

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

Defendant, GREAT AMERICAN INSURANCE COMPANY, by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff herein alleges upon information and belief:

First: Admits the allegations contained in paragraph "FIRST".

Second: Admits the allegations contained in paragraph "SECOND".

Third: Admits so much of the allegation in paragraph "THIRD" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "FOURTH".

Fifth: Denies knowledge or information sufficient to form a belief as to the allegation in paragraph "FIFTH".

Sixth: Denies knowledge or information sufficient to form a belief as to the allegations in paragraph "SIXTH".

Answer, Counterclaim and Set-Off of Great American Insurance Co.

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "SEVENTH".

Eighth: Admits insuring certain shipments carried on board the HELLENIC SAILOR and agreeing to pay all proper General Average charges in exchange for delivery of the said shipments but except as is so specifically admitted denies the allegations in paragraph "EIGHTH".

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International Inc. but except as is so specifically admitted denies the allegations in paragraph "NINTH".

Tenth: Denies the allegations in paragraph "TENTH".

Eleventh: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "ELEVENTH".

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Great American Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Twelfth: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer, Counterclaim and Set-Off of Great American Insurance Co.

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Great American Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Thirteenth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

As and for a Counter-Claim Against Plaintiff Herein, Defendant, Great American Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Fourteenth: On or about March 2nd, 1968, this defendant's assignor deposited with agents for plaintiff the sum of $318.10 in order to obtain release of the shipment described in Schedule "B" of the Complaint as "Interest No. 19."

Fifteenth: Defendant has reimbursed its assignor the sum of $318.10 in consequence of which defendant is entitled to recover of plaintiff the sum so deposited which sum it has demanded of plaintiff and which plaintiff refuses to pay.

Answer, Counterclaim and Set-Off of Great American Insurance Co.

As and for a Set-Off to Plaintiff's Claim, Defendant Great American Insurance Company, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief:

Sixteenth: Defendant repeats and realleges each and every allegation of paragraph "FIFTEENTH" with the same force and effect as if set forth herein.

Seventeenth: Should plaintiff be entitled to recover of this defendant on account of the matters alleged in the Complaint, which defendant denies, such recovery should be reduced by the amount of $318.10 by way of set-off.

WHEREFORE, defendant Great American Insurance Company, prays for judgment in its favor dismissing the Complaint of plaintiff herein and awarding it the sum of $318.10 plus interest and costs of this action or in the alternative, should this Court find for plaintiff on its claim for general average contributions, then defendant prays for judgment in its favor against plaintiff on its claim for set-off and for such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH
Attorneys for Defendant Great American Insurance Company

By: DONALD M. KENNEDY
A Member of the Firm
161 William Street
New York, New York 10038
(212) 964-3553

Answer, Counterclaim and Set-Off of Great American Insurance Co.

To:

BURLINGHAM UNDERWOOD & LORD
Attorneys for Plaintiff
25 Broadway
New York, New York 10004
(212) 422-7585

Reply to Counterclaim of American Motorists Insurance Company

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

Plaintiff Hellenic Lines Limited by its attorneys, Burlingham Underwood & Lord, for its reply to the counterclaim of defendant American Motorists Insurance Company contained in its answer to the complaint, alleges upon information and belief as follows:

First: It admits that the shipment referred to in Schedule "B" of the complaint as "Interest No. 10" was insured by defendant and, except as so admitted, denies each and every allegation contained in the Fourteenth numbered paragraph of defendant's answer.

Second: It denies knowledge or information sufficient to form a belief as to the truth of the allegations contained in the Fifteenth numbered paragraph of defendant's answer.

Third: It admits demand and non-payment and, except as so admitted, denies each and every allegation contained in the Sixteenth numbered paragraph of defendant's answer.

Reply to Counterclaim of American Motorists Insurance Co.

Fourth: It admits that the shipment referred to in Schedule "B" of the complaint as "Interest No. 14" was insured by defendant and, except as so admitted, denies each and every allegation contained in the Seventeenth numbered paragraph of defendant's answer.

Fifth: It denies knowledge or information sufficient to form a belief as to the truth of the allegations contained in the Eighteenth numbered paragraph of defendant's answer.

Sixth: It denies each and every allegation contained in the Nineteenth numbered paragraph of defendant's answer.

Further Replying to the Counterclaim and as and for a First, Separate and Complete Defense to the Claims of Defendant Herein, the Plaintiff by Its Attorneys Alleges Upon Information and Belief:

Seventh: Under the terms and conditions of the pertinent contracts of carriage referred to in Schedule "B" of the complaint, which govern the rights and liabilities of the parties, the plaintiff is not liable.

Further Replying to the Counterclaim and as and for a Second, Separate and Complete Defense to the Claims of Defendant Herein, the Plaintiff by Its Attorneys Alleges Upon Information and Belief:

Eighth: Under the terms and conditions of the United States Carriage of Goods by Sea Act, 1936 and/or The

Reply to Counterclaim of American Motorists Insurance Co.

Harter Act, which govern the rights and liabilities of the parties, the plaintiff is not liable.

WHEREFORE plaintiff Hellenic Lines Limited demands that said defendant's counter-claim be dismissed and that it have judgment against defendant as prayed for in its complaint, together with interest and costs, and that plaintiff have such other, further and different relief as may be just and proper.

Dated: New York, New York
November 14, 1973

BURLINGHAM UNDERWOOD & LORD
Attorneys for Plaintiff

By JOHN S. ROGERS
A Member of the Firm
Office & P. O. Address
25 Broadway
New York, New York 10004
HAnover 2-7585

Reply to Counterclaim of Great American Insurance Company

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

Plaintiff Hellenic Lines Limited by its attorneys, Burlingham Underwood & Lord, for its reply to the counterclaim of defendant Great American Insurance Company contained in its answer to the complaint, alleges upon information and belief as follows:

First: It denies knowledge or information sufficient to form a belief as to the truth of the allegations contained in the Fourteenth numbered paragraph of defendant's answer.

Second: It admits demand, and except as so admitted denies knowledge or information sufficient to form a belief as to the truth of the allegations contained in the Fifteenth numbered paragraph of defendant's answer.

Third: Answering the allegations contained in the Sixteenth numbered paragraph of defendant's answer, it repleads with the same force and effect as though here repleaded at length each of the allegations in the preceding paragraphs of this reply.

Reply to Counterclaim of Great American Insurance Co.

Fourth: It denies each and every allegation contained in the Seventeenth numbered paragraph of defendant's answer.

WHEREFORE plaintiff Hellenic Lines Limited demands that said defendant's counter-claim be dismissed and that it have judgment against defendant as prayed for in its complaint, together with interest and costs, and that plaintiff have such other, further and different relief as may be just and proper.

Dated: New York, New York
November 14, 1973

BURLINGHAM UNDERWOOD & LORD
Attorneys for Plaintiff

By JOHN S. ROGERS
A Member of the Firm
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Plaintiff's Proposed Findings of Fact and Conclusions of Law

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

FINDINGS OF FACT

1. At all times pertinent hereto plaintiff Hellenic Lines Limited (hereinafter "Hellenic") was and now is a Greek corporation, was the owner of the Greek-flag motor vessel HELLENIC SAILOR, was engaged in the common carriage of merchandise by water and utilized the M.V. HELLENIC SAILOR in such service between certain United States Gulf and East Coast ports and the ports of Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong and Calcutta.

2. At all times pertinent hereto, the defendants were and still are marine insurance companies incorporated under the laws of the places specified in Schedule A annexed to the complaint and made part hereof, with offices and places of business within this District as set forth in said Schedule A.

3. Defendants each insured certain shipments, identified in Schedule B annexed to the complaint and made part hereof, which were among those shipped by various shippers on board the M.V. HELLENIC SAILOR at Savannah, New Orleans, Houston, Jacksonville, Philadelphia and New

York, respectively, for transportation to Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong, and Calcutta. Pursuant to their respective contracts of insurance each of said defendants became liable to their respective assureds to pay general average contributions, salvage and special charges in respect of the shipments which they insured.

4. Prior to delivery of the shipments by Hellenic and in consideration of Hellenic's permitting delivery thereof at destination free and clear of its lien on the cargo for general average contributions, salvage, and special charges due from the cargo and without Hellenic's requiring cash deposits, the shippers or owners of said shipments signed general average agreements either in the form of "Lloyd's Average Bond" or "Despard & Co., Inc.'s Average Agreement" wherein they undertook to pay all proper general average contributions, salvage and special charges for which said shipments should be liable, and defendants signed general average guarantees wherein they guaranteed payment of all such general average contributions, salvage, and special charges for which the shipments insured by them should be liable.

5. In consideration of Cargo's undertakings and of defendants' written guarantees Hellenic delivered the shipments herein at destination without exercise of its aforesaid liens and without requiring cash deposits.

6. The HELLENIC SAILOR arrived at Savannah, Georgia inbound to the United States on a voyage from foreign ports via Durban, South Africa, on October 5, 1967.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

7. During this call at Savannah a shipment of two rolls of carpet, identified in Schedule B to the complaint as Interest No. 673 and insured by defendant Great American Insurance Company, was delivered to and loaded aboard the HELLENIC SAILOR for transportation to Chittagong.

8. At the time of loading this shipment at Savannah, Hellenic, as carrier, issued Savannah/Chittagong Bill of Lading No. 1 on its short form which bill of lading contained certain terms and conditions, and incorporated all of the terms of Hellenic's regular form of bill of lading including Clause 11, commonly referred to as the "new *Jason* Clause".

9. Clause 11 of said bill of lading provided in part:

> "In case of accident, danger, damage or disaster before or after commencement of the voyage resulting from any cause whatever, whether due to negligence or not for which, or for the consequences of which, the carrier is not responsible by statute, contract or otherwise, the goods, their owners or shippers shall contribute with the carrier in General Average to the payment of any sacrifices, losses or expenses of a General Average nature that may be made or incurred and shall pay salvage and special charges incurred in respect to the goods. If the salving ship is owned or operated by the carrier, salvage shall be paid so fully as if the salving ship was owned or operated by strangers. General Average shall be adjusted, stated and settled in any port or place elected by the carrier and according

to York/Antwerp Rules 1950, except Rule 22 thereof. The General Average statement in every instance shall be prepared by average adjustors selected by the carrier. In average adjustments, disbursements in foreign currency shall be exchanged into any currency at the carrier's option at the rate prevailing at time of payment and allowances for damage to cargo claimed in foreign currency shall be converted at the rate prevailing on the last day of discharge at the port of final discharge of such damaged cargo. Such deposit, agreement or other security as the carrier or his agents may consider requisite to cover the estimated contribution of the goods and any salvage and special charges thereon shall be made by the goods or shippers to the carrier, if required, before delivery. Any deposits shall be payable at carrier's option in the currency indicated on each occasion by the carrier pending settlement of the General Average. Refunds of credit balance shall be paid in the same currency. It is understood that in every instance the shipper shall remain responsible until the statement of average has been settled. • • • "

10. At 1530 hours on October 7, 1967, discharging of inbound cargo and loading of outbound cargo was completed and at 1603 hours the HELLENIC SAILOR sailed from Savannah enroute to Charleston and New York, arriving at Charleston later that day.

11. The HELLENIC SAILOR sailed from Charleston on October 8, 1967, after discharging cargo, and proceeded to New York where she arrived on October 10, 1967, berthing

on the north side of Hellenic's terminal at the Foot of 57th Street, Brooklyn.

12. Discharging of inbound cargo took place until the night of October 14, 1967, and on the morning of October 16, 1967, the HELLENIC SAILOR was taken to the facilities of Bethlehem Steel Corporation at Hoboken, for her annual drydocking.

13. The HELLENIC SAILOR departed Bethlehem's facilities and the Port of New York on October 21, 1967, enroute to Philadelphia and New Orleans.

14. On October 22, 1967, the HELLENIC SAILOR arrived at Philadelphia for the purpose of discharging inbound cargo and she departed later the same day bound for New Orleans.

15. The HELLENIC SAILOR arrived at New Orleans from Philadelphia on the morning of October 27, 1967, for the purpose of discharging and loading cargo.

16. On October 29, 1967, a shipment of 2,763.317 metric tons bulk soybean oil destined for Kandla was delivered to the HELLENIC SAILOR at the Hess Terminal and loaded in the vessel's deep tanks. (See Plaintiff's Proposed Findings of Fact and Conclusions of Law in the companion case, *Hellenic Lines Limited* v. *Life Insurance Corporation of India et ano,* 71 Civ. 3221 TPG).

17. Loading of the soybean oil was completed at 1210 hours on October 29, 1967, and the HELLENIC SAILOR then

shifted to the Florida Avenue wharf to discharge inbound cargo and to load additional outbound general cargo.

18. Commencing at 0800 hours on October 31, 1967 during this call at New Orleans the following shipments, identified in the complaint and insured by certain of the defendants as set forth therein, were delivered to and loaded aboard the HELLENIC SAILOR for transportation to Port Sudan, Karachi, Colombo, and Chittagong, and bills of lading issued therefor by Hellenic as identified more particularly in Schedule B to the complaint:

Interest Nos. 183, 91, 459, 185, 675, 92, 93, 462, 463, 464, 467, 184, 471.

19. Loading was completed at 1700 hours on October 31, 1967, and at 1945 hours the HELLENIC SAILOR sailed from New Orleans partially laden with outbound cargo and proceeded on her voyage via Houston, Jacksonville, Philadelphia and New York.

20. The HELLENIC SAILOR arrived at Houston from New Orleans on the morning of November 2, 1967, for the purpose of discharging and loading cargo.

21. Between November 2 and 4, 1967 during this call at Houston the following shipments, identified in the complaint and insured by certain of the defendants as set forth therein, were delivered to and loaded aboard the HELLENIC SAILOR for transportation to Jeddah, Port Sudan, Aden, Karachi and Colombo, and bils of lading issued there-

for by Hellenic as identified more particularly in Schedule B to the complaint:

Interest Nos. 10, 14, 16, 17, 1, 7, 15, 12, 13, 430, 162, 163, 165, 170, 171, 356, 357, 366, 178, 84, 172.

22. Loading was completed at 0515 hours on November 4, 1967, and at 0550 hours the HELLENIC SAILOR sailed from Houston.

23. The HELLENIC SAILOR arrived at Jacksonville from Houston in the early morning of November 8, 1967, and loading commenced at 0800 hours.

24. During this call at Jacksonville a shipment of 448 rolls of Kraft Linerboard, identified in Schedule B to the complaint as Interest No. 96 and insured by defendant Indemnity Marine Assurance Company Ltd., was delivered to and loaded aboard the HELLENIC SAILOR for transportation to Port Sudan, and Jacksonville/Port Sudan Bill of Lading No. 1 issued therefor by Hellenic.

25. Loading was completed at 1700 hours on November 8, 1967, and at 1800 hours the HELLENIC SAILOR sailed from Jacksonville.

26. The HELLENIC SAILOR arrived at Philadelphia from Jacksonville on the morning of November 11, 1967.

27. Between November 11 and November 13, 1967, during this call at Philadelphia the following shipments, identified in the complaint and insured by certain of the defen-

dants as set forth therein, were delivered to and loaded aboard the HELLENIC SAILOR for transportation to Jeddah, Port Sudan, Aden and Colombo, and bills of lading issued therefor by Hellenic as identified more particularly in Schedule B to the complaint:

Interest Nos. 377, 437, 438, 25, 19, 86, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 436, 23, 425, 458.

28. Loading was completed at 2030 hours on November 13, 1967, and at 2120 hours the HELLENIC SAILOR sailed from Philadelphia.

29. The HELLENIC SAILOR arrived at New York from Philadelphia on the afternoon of November 14, 1967, and berthed on the north side of Hellenic's terminal at the foot of 57th Street, Brooklyn.

30. Between November 15 and 18, 1967 during this call at New York the following shipments, identified in the complaint and insured by certain of the defendants as set forth therein, were delivered to and loaded aboard the HELLENIC SAILOR for transportation to Jeddah, Port Sudan, Aden, Karachi, Colombo, Chittagong, and Calcutta, and bills of lading issued therefor by Hellenic as identified more particularly in Schedule B to the complaint:

Interest Nos. 32, 50, 124, 334, 352, 513, 524, 528, 587, 618, 623, 624, 625, 626, 656, 657, 104, 155, 195, 417, 31, 36, 49, 63, 105, 111, 384, 408, 496, 499, 504, 510, 511, 523, 526, 540, 614, 634, 637, 653, 654, 33, 100,

502, 512, 516, 537, 538, 577, 655, 67, 400, 615, 621, 52, 138, 142, 320, 141, 291, 292, 576, 635, 423, 40, 47, 123, 133, 134, 473, 539, 556, 578, 579, 580, 581, 582, 639, 650, 81, 37, 45, 70, 311, 335, 336, 349, 686, 238, 314, 118, 198, 199, 200, 201, 202, 203, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 216, 218, 219, 220, 221, 222, 293, 294, 295, 492, 525, 544, 698, 474, 699, 700, 55, 112, 117, 127, 196, 380, 383, 409, 421, 424, 518, 532, 533, 558, 570, 627, 46, 63, 66, 77, 80, 228, 279, 413, 416, 497, 505, 508, 520, 531, 534, 541, 564, 575, 588, 589, 590, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 607, 628, 629, 630, 636, 638, 645, 661, 663, 697, 397, 398, 399, 426, 427, 559, 651, 652, 146, 407, 298, 382, 411, 617, 619, 660, 406, 102, 145, 192, 232, 515, 535, 693, 552, 646, 647, 649, 659, 97, 114, 143, 147, 233, 281, 287, 304, 351, 402, 529, 572, 584, 608, 609, 632, 633, 58, 59, 695, 557.

31. Loading was completed at 1300 hours on November 18, 1967 and at 2143 hours the HELLENIC SAILOR departed her dock and proceeded to the Quarantine Anchorage where she anchored at 2255 hours for the purpose of securing deck cargo.

32. At approximately 0520 hours on November 19, 1967 the HELLENIC SAILOR weighed anchor and sailed from New York laden with approximately 7,817 tons of cargo bound for Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong and Calcutta.

33. Each of the aforesaid bills of lading issued by Hellenic, as carrier, at New Orleans, Houston, Jacksonville,

Philadelphia and New York contained or incorporated therein certain terms and conditions identical to Savannah/Chittagong Bill of Lading No. 1 including Clause 11, the "new *Jason* Clause", the pertinent language of which has been quoted above.

34. As of and prior to October 7, 1967 when the HELLENIC SAILOR sailed from Savannah, and as of and prior to October 31, 1967, when the said vessel sailed from New Orleans, and as of and prior to November 4, 1967 when she sailed from Houston, and as of and prior to November 8, 1967 when she sailed from Jacksonville, and as of and prior to November 13, 1967 when she sailed from Philadelphia, and as of and prior to November 19, 1967 when she sailed from New York, Hellenic took such steps as would be reasonably prudent to assure that HELLENIC SAILOR was seaworthy for the contemplated voyage, including with respect to her main engine.

35. At 0447 hours on December 24, 1967, while engaged in performing the voyage contemplated and called for by said bills of lading, when the HELLENIC SAILOR was approximately 120 miles NNE of Massawa enroute to Jeddah, her first port of discharge, at a position of 17° 30′ N, 40° 00′ E, the vessel's main engine was stopped by the engineers on watch due to heavy knocking.

36. Thereafter it was found that the No. 2 after side rod crankshaft web was fractured and it was not possible by the means available on the vessel to restore operation of the main engine.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

37. The HELLENIC SAILOR drifted without power until 0930 hours on December 25, 1967, when at 16° 59′ N, 39° 56′ E the vessel's anchor caught securely at a depth of 45 fathoms.

38. The services of the Sudanese tug TAWARTIT, located at Port Sudan, were engaged by the Master to tow the disabled HELLENIC SAILOR to Port Sudan, a port of refuge. The HELLENIC SAILOR was to taken in tow by the TAWARTIT at 1632 hours on December 26, 1967, and tug and tow proceeded to Port Sudan.

39. At 0040 hours on December 29, 1967, the HELLENIC SAILOR was moored alongside a dock at Port Sudan.

40. As a result of this casualty certain extraordinary expenditures of a general average nature were made or incurred by Hellenic for the common benefit and safety and preservation of the HELLENIC SAILOR and her cargo, and for the completion of the common venture.

41. Under the terms of the aforesaid bills of lading Hellenic declared a General Average and caused the shippers or owners of the vessel's cargo to be advised that the cargo was required to contribute with Hellenic in general average.

42. On January 13, 1968, the HELLENIC SAILOR was towed to an anchorage in the harbor of Port Sudan where she was joined on February 13, 1968, by the M/V HELLENIC GLORY, another general cargo vessel operated by Hellenic.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

43. At 1400 hours on February 14, 1968, transhipment of the HELLENIC SAILOR's general cargo, with the exception of general cargo destined for Port Sudan and the bulk soybean oil insured by defendant Life Insurance Corporation of India herein (See 71 Civ. 3221 TPG), was begun onto the M/V HELLENIC GLORY.

44. At 0640 hours on February 24, 1968, the transshipment of all the HELLENIC SAILOR's general cargo destined for Jeddah, Aden, Karachi, Colombo, Chittagong and Calcutta was completed and at 0700 hours the HELLENIC GLORY sailed from Port Sudan and thereafter delivered the HELLENIC SAILOR's cargo to destination charging no additional freight therefor.

45. Later that day the HELLENIC SAILOR was towed to a dock and between 1135 hours on February 24 and 1100 hours on February 26, 1968, her general cargo destined for Port Sudan was unloaded after which she was towed back to an anchorage.

46. Pursuant to written agreement dated April 29, 1968, Hellenic engaged the services of the motor tug JUNAK to tow the HELLENIC SAILOR from Port Sudan to Bombay, a second port of refuge, so that permanent repairs could be effected by replacement of the fractured No. 2 crank.

47. On May 7, 1968 the HELLENIC SAILOR was taken in tow by the tug JUNAK for Bombay where tug and tow arrived on May 25, 1968, and the HELLENIC SAILOR anchored.

48. At 1640 hours on May 28, 1967, the HELLENIC SAILOR was moored alongside Alexandria Dock No. 18 at Bombay

to discharge the bulk soybean oil cargo which had been carried in the vessel's deep tanks.

49. At 2113 hours on May 28, 1968, unloading of the soybean oil was begun and was continued until 1640 hours on May 31, 1968 when delivery of the soybean oil cargo was completed.

50. Pursuant to and in accordance with the terms of the aforesaid bills of lading Despard International, Inc., average adjusters at the Port of New York, adjusted the average and prepared a Statement of General and Particular Average dated November 15, 1970.

51. The Statement of General and Particular Average was duly prepared by Despard International, Inc. A copy of said General Average Statement was delivered to the defendants herein and/or their representatives prior to the commencement of this suit.

52. A true and complete schedule of charges and expenses incurred by the HELLENIC SAILOR's owner as a result of the casualty is set forth following page 55 of said Statement of General and Particular Average.

53. The charges and expenses set forth in the Statement of General and Particular Average dated November 15, 1970 are all correct and reasonable.

54. As appears from the Statement of General and Particular Average the amounts due from each of the defendants herein for general average contributions, the payment

of which they each guaranteed with respect to the shipments which they insured, are correctly set forth at pages 5 through 18 of the complaint, of which the entire amounts remain unpaid.

CONCLUSIONS OF LAW

1. The Court has jurisdiction of the parties and of the subject matter of this controversy.

2. As to the shipments herein loaded at Savannah, New Orleans, Houston, Jacksonville, Philadelphia and New York, Hellenic exercised due diligence at the respective ports where the particular shipments were lifted to make the HELLENIC SAILOR seaworthy. *Mississippi Shipping Co.* v. *Zander and Company,* 270 F.2d 345 (5th Cir. 1959); 273 F.2d 618 (5th Cir. 1960).

3. The Statement of General and Particular Average prepared by Despard International, Inc. complied with the applicable provisions of the respective bills of lading and correctly set forth in detail the interests involved, and correctly stated and apportioned all charges among the various interests at risk.

4. Defendant American Motorists Insurance Company has failed to establish any right to recovery for alleged shortage and damage to the shipment identified in Schedule B to the complaint as Interest No. 10, as asserted in its counterclaim, and has similarly failed to establish any right to set off or recoupment with respect to the shipment identified as Interest No. 14 in Schedule B to the complaint.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

5. Defendant Great American Insurance Company has failed to establish any right to recover the sum of $318.10 with respect to the shipment identified in Schedule B to the complaint as Interest No. 19, as asserted in its counterclaim, and has similarly failed to establish any right to set off said amount against any recovery by Hellenic.

6. Each defendant herein is liable to pay to Hellenic the amounts set forth in said Statement of General and Particular Average and charged against the interests insured by it as set forth at pages 5 through 18 of the complaint, and plaintiff is entitled to judgment for said amount together with interest from November 15, 1970 and costs of this proceeding.

Dated: New York, New York
December 21, 1973

Respectfully submitted,

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[Affidavit of Service by Mail omitted in printing]

Defendants' Proposed Findings of Fact and Conclusions of Law

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 2865

[CAPTION OMITTED]

FINDINGS OF FACT

1. The M. V. HELLENIC SAILOR, a vessel owned by Hellenic Lines Limited was built in 1939 by Sun Shipbuilding Company of Chester, Pennsylvania. Its engine was a diesel of the kind commonly known as Sun-Doxford. Such engines are located amidships.

2. At all material times the general manager of plaintiff Hellenic Lines Limited was P. Callimanopulos. He generally maintained his office at the New York Office of Hellenic Lines.

3. Mr. Charles Allen was employed by Hellenic Lines Limited as its marine superintendent from 1951 and was so employed in the years 1967 and 1968. His duties generally were to take care of the maintenance of the ships of his employer and he was responsible only to its general manager.

4. At all material times Mr. Harry Petsis was the assistant port engineer for the plaintiff Hellenic Lines Limited, and he maintained his offices at the New York Office of Hellenic Lines Limited.

Defendants' Proposed Findings of Fact and Conclusions of Law

5. On October 11, 1967 Hellenic Lines Limited employed Golten Marine Co. Inc., to determine the alignment of the Hellenic Sailor's main engine crankshaft using the wire gauge method. Golten then reported to Hellenic that the shaft had a sag of .032 of an inch at bearing number 2, .042 of an inch at bearing number 3 and .032 of an inch sag at bearing number 4.

6. In view of the information contained in the Golten report of wire gauge readings, Allen, on November 6th, 1967, wrote to the vessel's chief engineer, Markos Evangelou, expressing some concern about the figures reported and recommending that further readings be taken at the next available opportunity with the ship both in a loaded and light condition.

7. On October 31, 1967 at about 2100 hours while the vessel was proceeding through the Industrial Canal into the Mississippi River, having just departed New Orleans, she touched the bank of the said canal on her starboard side causing the vessel to list about 10° to the port.

8. The Master reported this incident to his New Orleans office by letter dated October 31st, 1967. At that time he stated that "because of this heavy scratch [there] may be damage caused to the bottom plates, propeller or rudder which we cannot see presently." He also requested New Orleans to advise the New York office of the incident.

9. By interoffice memorandum dated November 2, 1967, the Master's letter concerning the October 31st grounding

was transmitted by Hellenic's New Orleans office to its New York office. The memo was received at New York on November 4th, 1967. Mr. P. Callimanopulos routed the November 2nd memo and the Captain's letter to Mr. G. Hennessy, who was the manager of Hellenic's Claims Department.

10. The reason that Allen wrote his November 6, 1967 letter to the vessel's chief engineer was that the crankshaft deflection as reflected in the Golten readings was greater than it should have been.

11. In writing his November 6th letter to the chief engineer, Allen intended that the chief engineer take alignment readings of the vessel's crankshaft.

12. Evangelou took the alignment reading at Philadelphia on November 13, 1967 pursuant to instructions he had received from Charles Allen in Allen's letter to him of Nov. 6th, 1967.

13. At that time the vessel was almost fully loaded. It was found that the crankshaft was in a sagged condition as follows:

.023 of an inch at No. 2 main bearing
.021 of an inch at No. 3 main bearing
and .035 of an inch at No. 4 main bearing

14. When a vessel such as the HELLENIC SAILOR is fully loaded, it is expected that the vessel's crankshaft will show a hog rather than a sag.

Defendants' Proposed Findings of Fact and Conclusions of Law

15. At the time he wrote his Nov. 6th, 1967 letter to the chief engineer, Allen knew of the incident that had been reported by the Master in his letter dated Oct. 31st, 1967, *i.e.*, the grounding upon departing New Orleans.

16. Charles Allen attended on board the HELLENIC SAILOR at the time it was in New York during the month of November 1967. At that time he had conversations with both the master and the vessel's chief engineer. In view of his concern about the crankshaft alignment, he discussed this situation with the chief engineer.

17. The chief engineer did not check the alignment of the vessel's main engine crankshaft while the vessel was in New York in November of 1967.

18. On December 24th, 1967 while the HELLENIC SAILOR was proceeding to the port of Port Sudan, the vessel's main engine was found to have become damaged. Upon closer examination the chief engineer discovered that the main engine's crankshaft had been fractured. Plaintiff's New York and Piraeus offices were notified of this casualty on or about the same date.

19. The vessel arrived at Port Sudan on or about December 29, 1967. The following day the Master proceeded to the Port Sudan Port Authority and filed a note of protest regarding a certain storm which the vessel had encountered in the Atlantic on November 20th, 1967 and regarding also the engine damage of 12/24/67 which he reported was probably the result of the violent storm of 11/20/67.

Defendants' Proposed Findings of Fact and Conclusions of Law

20. Allen was sent from New York to Port Sudan on or about January 1, 1968 and he attended on board the ship on January 2, 1968 while the vessel was still at Port Sudan.

21. Allen attended the vessel at Port Sudan in January of 1968 at the request of Mr. Callimanopulos.

22. Allen was to report to Mr. Callimanopulos concerning what could be done to complete the voyage.

23. Allen devised a plan to effect a temporary repair which would enable the vessel to complete its voyage, at a slower speed on 3 of 4 cylinders. In this connection, the crew began repairing the main engine on Jan. 3rd, 1968. Also in the same connection, the vessel's chief engineer, Mr. M. Evangelou, was dispatched to Piraeus on Jan. 6th, 1968. He took with him a template and drawings which were to be used at Piraeus for the purpose of forging a solid steel strongback. This strongback was to be applied to the fractured crankshaft web.

24. Owner made the decision to discontinue the temporary repairs which had been suggested by Charles Allen, and he was advised to abandon those temporary repairs on Jan. 7th, 1968.

25. The reason that owner instructed Allen to abandon his temporary repairs was that it had decided to make a permanent repair, *i.e.*, the metalock repair.

26. The temporary repairs proposed by Charles Allen would have been successful and enabled the vessel to con-

tinue its voyage albeit at a slower speed and on 3 rather than 4 cylinders.

27. The metalock repair was abandoned when the Lloyd's inspector found a fracture in the fillet of the journal pin. These fractures developed as the result of excessive heat applied to the shaft during its preparation for the metalock repairs.

28. The Lloyd's inspector also condemned the crank web because of certain scars found in the web. These scars were put there in connection with the temporary repairs which had been proposed by Allen, but which were abandoned upon owner's instructions.

29. If the metalock repairs had been successfully completed the vessel would have been able to carry all of the cargoes to their respective destinations.

30. Allen supervised all repairs which were attempted of the crankshaft while the vessel was at Port Sudan during the months of January and February, 1968.

31. On or about February 12th, the sister ship HELLENIC GLORY moored alongside the HELLENIC SAILOR for the purpose of receiving all dry cargo then on board the latter so that the cargoes could be carried to their respective destinations. No additional freight was collected for the transport of such cargoes on the HELLENIC GLORY.

32. The reason that Hellenic Lines Limited transported the dry cargoes ex the HELLENIC SAILOR to their intended

destinations on board the HELLENIC GLORY was because in doing so, Hellenic could claim a continuation of the alleged general average as to such cargoes and thus have such cargoes contribute to all the alleged general average expenses incurred at Port Sudan.

33. Repairs to the vessel's main engine crankshaft were accomplished at Bombay on or about August 16, 1968.

34. On August 16, 1968, chief engineer Evangelou took a wire gauge reading of the vessel's crankshaft after it had been repaired. The shaft alignment, as reflected in that reading, was zero at number 4 main bearing, .001 of an inch at number 3 main bearing and .002 of an inch at number 2 main bearing. These readings indicated that the bearings were too high. The numbers 2, 3 and 4 bearings were therefore removed and scraped. The revised and final reading after this work showed that the crankshaft was sagged as follows: .003 of an inch at number 4 main bearing, .004 of an inch at number 3 main bearing, and .004 of an inch at number 2 main bearing. At these times the vessel's draft was 12 feet, 0 inches forward and 15 feet, 0 inches aft.

35. Under normal operating conditions a crankshaft should last the life of the vessel, regardless of the vessel's age or years of service.

36. In a vessel of the type of the HELLENIC SAILOR, one does not get a very reliable crankshaft alignment reading if the difference between the aft and forward draft is more than three feet.

37. The alignment readings obtained by Hellenic Lines of the crankshaft on the HELLENIC SAILOR during the period from 1960 through 1967 were for the most part not too reliable for the reason that at the time the alignments were taken the differential between the vessel's forward and aft draft was more than 3 feet.

38. Although Allen had had considerable experience with doxford engines, he had never determined the maximum hog or sag which would be permissible for the operation of a crankshaft on a doxford engine.

39. A telescopic reading is more accurate than a wire reading for the purposes of determining the alignment of a main engine crankshaft of the type found on the HELLENIC SAILOR.

40. During the 7 year period just preceding the fracture of the vessel's crankshaft, it was neither magnafluxed nor dyechecked, although this is the only way that one can discover whether a crankshaft has any hairline cracks or fractures.

41. In order to determine just how much sag should have been allowed for in the main bearing, the alignment of the crankshaft should have been taken while the ship was in a ballasted condition.

42. In the words of Charles Allen, the reason that the HELLENIC SAILOR's main engine crankshaft was not checked for alignment while the vessel was in a ballast position was because the ship is there to make money.

43. Another factor in determining the allowable or desirable deflection in a crankshaft is knowledge of the disposition of the cargo in the vessel at times when the crankshaft alignments are taken.

44. The grounding, as reported by the master on October 31st, 1967 did not cause any damage to the structures of the HELLENIC SAILOR.

45. Hellenic Lines contended that the fracture in the vessel's crankshaft occurred as the result of the grounding reported by the master on Oct. 31st, 1967.

46. On the basis of this contention Hellenic presented a claim for the cost of repairs to the damaged crankshaft to its hull underwriters.

47. After lengthy negotiations with its hull underwriters Hellenic's claim for particular average damage to the vessel's crankshaft was paid by underwriters on a without prejudice basis.

48. If, as contended by Hellenic Lines, the grounding of October 31st, 1967 was sufficient to cause the subsequent fracture in the crankshaft, then the vessel's crankshaft should have been examined, at a time when the vessel was in New York in Nov. 1967. This examination was all the more imperative in view of the concern of Charles Allen, its marine superintendent concerning the crankshaft as reflected in his letter to the chief engineer dated Nov. 6, 1967.

49. At the time of the casualty the vessel's crankshaft was running in a sagged condition. The maximum sag was in the way of the number 3 main bearing and this is the area at about which the breakage in the crankshaft occurred.

50. There is a greater bending stress exerted at the point on the crankshaft where there is the greater sag.

51. The cause of the fracture of the crankshaft of the HELLENIC SAILOR was the deflection of the crankshaft which caused the setting up of excessive stresses during the operation of the shaft.

52. Main engine crankshaft alignments can be changed by moving chocks or by tightening or loosening bolts in the main engine bedplate.

53. Charles Allen did not know what the acceptable sag in the bedplate for the HELLENIC SAILOR was.

54. The alignment of the bedplate for the HELLENIC SAILOR's main engine was not checked before the casualty of Dec. 1967.

55. The slack and/or broken bolts, as found in the bedplate of the HELLENIC SAILOR, contributed to the fracture of the vessel's crankshaft.

56. There had been a recurrence of repairs to the number 2 upper piston dating back to March, 1966, when the chief engineer changed the alignment of certain upper pis-

ton bottleguides and this condition contributed to the fracture of the vessel's main engine crankshaft.

57. Commencing in early 1967 the chief engineer of the HELLENIC SAILOR regularly took wire alignment readings. Their non-production by Hellenic supports a finding that such readings are unfavorable to Hellenic's cause.

58. The mean full draft of the HELLENIC SAILOR is 29 feet.

CONCLUSIONS OF LAW

1. The Court has jurisdiction of the parties and the matters in controversy.

2. Since the test of seaworthiness is the ability of a vessel to complete the voyage contracted for, the HELLENIC SAILOR was unseaworthy when the subject voyage(s) commenced. *The Southwark,* (1903) 191 U.S. 1, 9.

3. As to all cargoes on board the vessel at the time of the engine breakdown, the owner did not before and at the beginning of the voyage exercise due diligence to make the ship seaworthy. 46 U.S.C. 1303 (1) (a).

4. As to cargoes on board as of the time the vessel arrived at New York in November 1967, the voyage is deemed to have recommenced there because owner effectively resumed control of the ship or should have done so after having received knowledge of the grounding of October 31st

and having knowledge of the "questionable" alignment of the main engine crankshaft. *The Isis* (1933) 290 U.S. 333.

5. In consequence of owner's lack of due diligence with respect to seaworthiness when the voyage(s) began, the cargo interests are not required to contribute in general average. *The Irrawaddy* (1898) 171 U.S. 187.

6. In any event, the cargo interests are not required to contribute in general average for any expenses beyond towage to Port Sudan where the voyage as to such cargoes was terminated. York Antwerp Rules 1950.

7. In any event, the cargo interests are not required to contribute in general average for temporary repairs improvidently abandoned by owners, or frustrated as the result of negligence, nor are they required to contribute in general average for permanent repairs whether successful or not; in consequence of which cargo interests are not required to contribute in general average for any repairs attempted at Port Sudan or for any alleged sacrifices or expenses incidental thereto. *Ibid.*

Defendants' Proposed Findings of Fact and Conclusions of Law

Dated: New York, New York
January 11, 1974

Respectfully submitted,

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By: THOMAS TOY

ACTION IN 71 CIV. 3221

Complaint

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 3221

HELLENIC LINES LIMITED,

Plaintiff,

—against—

LIFE INSURANCE CORPORATION OF INDIA,

Defendant.

Plaintiff, by its attorneys Burlingham Underwood Wright White & Lord, for its complaint against the defendant alleges upon information and belief as follows:

First: This is a case of admiralty and maritime jurisdiction as appears more fully herein, and is an admiralty and maritime claim within the meaning of Rule 9(h) of the Federal Rules of Civil Procedure.

Second: At all material times hereinafter mentioned, plaintiff was and still is a corporation organized and existing under and by virtue of the laws of the Kingdom of Greece engaged in the carriage of merchandise by water for hire with an office and place of business in Piraeus, Greece, and owner of the Greek flag motor vessel HELLENIC SAILOR in the carriage of merchandise between certain United States Gulf and East Coast ports and the ports of

Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong and Calcutta.

Third: At all material times the defendant was and still is a marine insurance company incorporated under the laws of the Union of India with an agency for the transaction of business within the State of New York and within this District, to wit Toplis & Harding, Inc., 111 John Street, New York, New York 10038.

Fourth: In or about the months of October-November, 1967 at New Orleans, Louisiana, Houston, Texas, Jacksonville, Florida, Savannah, Georgia, Philadelphia, Pennsylvania, and New York, New York, respectively, various shippers shipped on board the motor vessel HELLENIC SAILOR certain shipments of merchandise for transportation subject to the terms of certain bills of lading issued to the respective shippers of said merchandise by or on behalf of plaintiff and the motor vessel HELLENIC SAILOR.

Fifth: Each of said bills of lading provided in part:

"In case of accident, danger, damage or disaster before or after commencement of the voyage resulting from any cause whatever, whether due to negligence or not for which, or for the consequences of which, the carrier is not responsible by statute, contract or otherwise, the goods, their owners or shippers shall contribute with the carrier in General Average to the payment of any sacrifices, losses or expenses of a General Average nature that may be made or incurred and shall pay salvage and special charges incurred

in respect to the goods. If the salving ship is owned or operated by the carrier, salvage shall be paid so fully as if the salving ship was owned or operated by strangers. General Average shall be adjusted, stated and settled in any port or place elected by the carrier and according to York/Antwerp Rules 1950, except Rule 22 thereof. The General Average statement in every instance shall be prepared by average adjustors selected by the carrier. In average adjustments, disbursements in foreign currency shall be exchanged into any currency at the carrier's option at the rate prevailing at time of payment and allowances for damage to cargo claimed in foreign currency shall be converted at the rate prevailing on the last day of discharge at the port of final discharge of such damaged cargo. Such deposit, agreement or other security as the carrier or his agents may consider requisite to cover the estimated contribution of the goods and any salvage and special charges thereon shall be made by the goods or shippers to the carrier, if required, before delivery. Any deposits shall be payable at carrier's option in the currency indicated on each occasion by the carrier pending settlement of the General Average. Refunds of credit balance shall be paid in the same currency. It is understood that in every instance the shipper shall remain responsible until the statement of average has been settled. * * *"

Sixth: On October 31, 1967 the HELLENIC SAILOR, partially laden with cargo destined for certain of the ports referred to in paragraph Second hereof, grounded while

leaving New Orleans, after which she proceeded on her voyage via Houston, Jacksonville, Savannah, Philadelphia and New York where additional cargo was loaded. Thereafter on December 24, 1967, while engaged in performing the voyage contemplated and called for by said bills of lading, when the HELLENIC SAILOR was approximately 120 miles North Northeast of Massawa, said motor vessel's main engine was stopped due to heavy vibrations. Thereupon it was found that the No. 2 afterside rod crank shaft web was fractured, it was not possible by the means available on the vessel to restore operation of the main engine, and the vessel drifted.

Seventh: As a result of events hereinbefore set forth certain sacrifices, losses and expenses of a General Average nature as well as salvage and special charges in respect of the goods on board said vessel were made or incurred by plaintiff for the common benefit and safety and preservation of the ship and her cargo, and for the completion of the common venture.

Under the terms of the aforesaid bills of lading plaintiff was entitled to, and did declare a General Average and the aforesaid goods and the shippers or owners thereof became liable to contribute with plaintiff in General Average and to pay salvage and special charges incurred in respect of their respective goods, the claims for which constituted a lien on said goods.

Eighth: Defendant herein insured a shipment of 2,763.317 metric tons bulk crude degummed soybean oil shipped by Cargill Incorporated from New Orleans, Louisiana to

Kandla, India under New Orleans/Kandla Bill of Lading No. 1 dated October 29, 1967 and consigned to State Trading Corporation of India, which shipment was among those shipped on board the HELLENIC SAILOR as hereinbefore alleged, and pursuant to its contract of insurance said defendant became liable to pay general average contributions, salvage and special charges in respect of said shipment which it insured.

Prior to delivery of said goods and in consideration of plaintiff's permitting delivery at destination thereof free and clear from its aforesaid lien thereon and without requiring a cash deposit, defendant guaranteed payment of all General Average, salvage and special charges for which the goods insured by it should be liable and in consideration of such guarantees, plaintiff delivered said goods without exercise of its aforesaid lien and without requiring any cash deposit.

Ninth: Thereafter pursuant to and in accordance with the terms of the aforesaid bills of lading, Despard International, Inc., average adjusters at the Port of New York, adjusted the average and prepared a statement of general average dated November 15, 1970. Said general average statement was duly prepared in accordance with the applicable provisions of the respective bills of lading and correctly set forth in detail the interests involved, stating and apportioning all charges among the various interests at risk. A copy of said general average statement was delivered to the defendant herein and/or its representatives prior to the commencement of this suit.

Tenth: As appears from the general average statement the amount due from said defendant for general average contributions, salvage and special charges, with respect to its general average Interest No. 701 is $77,874.50, no part of which has been paid although duly demanded.

WHEREFORE, the plaintiff demands judgment against the defendant in the amount of $77,874.50 together with interest and costs, and that plaintiff have such other, further and different relief as may be just and proper.

Dated: New York, New York
July 20, 1971

BURLINGHAM UNDERWOOD WRIGHT
WHITE & LORD

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Answer

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ 3221

[Caption Omitted]

Defendant, LIFE INSURANCE CORPORATION OF INDIA, by its attorneys, Donovan, Donovan, Maloof & Walsh, answering the complaint of the plaintiff, herein alleges upon information and belief:

First: Admits the allegations contained in paragraph "FIRST".

Second: Admits the allegations contained in paragraph "SECOND".

Third: Admits so much of the allegation in paragraph "THIRD" as pertains to this defendant.

Fourth: Admits the allegations in paragraph "FOURTH".

Fifth: Denies knowledge or information sufficient to form a belief as to the allegation in paragraph "FIFTH".

Sixth: Admits knowledge or information sufficient to form a belief as to the allegations in paragraph "SIXTH".

Answer

Seventh: Admits plaintiff declared a General Average but except as is so specifically admitted denies the allegations in paragraph "SEVENTH".

Eighth: Admits insuring a certain shipment carried on board the HELLENIC SAILOR and agreeing to pay all proper General Average charges in exchange for delivery of the said shipment but except as is so specifically admitted denies the allegations in paragraph "EIGHTH".

Ninth: Admits receiving a copy of a "statement of general average dated November 15, 1970" as prepared by Despard International, Inc. but except as is so specifically admitted denies the allegations in paragraph "NINTH".

Tenth: Admits receiving a demand for payment and non-payment but except as is so specifically admitted denies the allegations in paragraph "TENTH".

Further Answering the Complaint and as and for a First, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant, Life Insurance Corporation of India, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Eleventh: The incident giving rise to the alleged general average occurred as the result of the fault of the plaintiff and in consequence of which neither this defendant nor the owners of the various shipments it insured are liable to contribute in general average.

Answer

As and for a Second, Separate and Complete Defense to the Claim of Plaintiff Herein, the Defendant Life Insurance Corporation of India, by Its Attorneys, Donovan, Donovan, Maloof & Walsh, Alleges Upon Information and Belief

Twelfth: The incident giving rise to the alleged general average occurred as the result of a cause for which or for the consequences of which the plaintiff is responsible by statute, contract or otherwise.

WHEREFORE, defendant, Life Insurance Corporation of India, prays that the complaint of the plaintiff be dismissed as against it in the amount of $77,874.50 together with costs and interest, and that it may have such other and further relief as to this Court may seem just and proper.

DONOVAN, DONOVAN, MALOOF & WALSH

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To:

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Plaintiff's Proposed Findings of Fact and Conclusions of Law

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ. 3221

[Caption Omitted]

FINDINGS OF FACT

1. At all times pertinent hereto plaintiff Hellenic Lines Limited (hereinafter "Hellenic") was and now is a Greek corporation, was the owner of the Greek-flag motor vessel HELLENIC SAILOR, was engaged in the common carriage of merchandise by water and utilized the M.V. HELLENIC SAILOR in such service between certain United States Gulf and East Coast ports and the ports of Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong and Calcutta.

2. At all times pertinent hereto, defendant Life Insurance Corporation of India was and still is a marine insurance company incorporated under the laws of the Union of India with an agency for the transaction of business within the State of New York, to wit Toplis & Harding, Inc., 111 John Street, City and State of New York.

3. Defendant Life Insurance Corporation of India insured a shipment of 2,763.317 metric tons bulk crude degummed soybean oil shipped by Cargill Incorporated on

board the M.V. HELLENIC SAILOR from New Orleans, Louisiana for transportation to Kandla, India and consigned to the State Trading Corporation of India. Pursuant to its contract of insurance defendant Life Insurance Corporation of India became liable to its assured to pay general average contributions, salvage and special charges in respect of this shipment which it insured.

4. Prior to delivery of the soybean oil shipment by Hellenic and in consideration of Hellenic's permitting delivery thereof at Bombay free and clear of its lien on the cargo for general average contributions, salvage, and special charges due from the cargo and without Hellenic's requiring a cash deposit, State Trading Corporation of India signed a general average agreement in the form of "Lloyd's Average Bond" wherein it undertook to pay all proper general average contributions, salvage and special charges for which the shipment should be liable, and defendant Life Insurance Corporation of India signed a general average guarantee wherein it guaranteed payment thereof.

5. In consideration of Cargo's undertaking and of defendant's written guarantee Hellenic delivered the shipment at Bombay without exercise of its aforesaid lien and without requiring a cash deposit.

6. A chronology of the HELLENIC SAILOR'S travels immediately prior to October 27, 1967 is contained in Plaintiff's Proposed Findings of Fact and Conclusions of Law

in the companion case. (*Hellenic Lines Limited* v. *Aetna Casualty & Surety Co. et al.*, 71 Civ. 2865 TPG).

7. The HELLENIC SAILOR arrived at New Orleans from Philadelphia on the morning of October 27, 1967 for the purpose of discharging and loading cargo.

8. The soybean oil was delivered to the HELLENIC SAILOR at the Hess Terminal and loaded in her Nos. 1, 2, 3 and 4 port and starboard deep tanks on October 29, 1967.

9. At the time of loading said shipment at New Orleans, Hellenic, as carrier, issued New Orleans/Kandla Bill of Lading No. 1 dated October 29, 1967, which bill of lading contained certain terms and conditions, including Clause 11, commonly referred to as the "new *Jason* Clause."

10. Clause 11 of the bill of lading provided in part:

"In case of accident, danger, damage or disaster before or after commencement of the voyage resulting from any cause whatever, whether due to negligence or not for which, or for the consequences of which, the carrier is not responsible by statute, contract or otherwise, the goods, their owners or shippers shall contribute with the carrier in General Average to the payment of any sacrifices, losses or expenses of a General Average nature that may be made or incurred and shall pay salvage and special charges incurred in respect to the goods. If the salving ship is owned or operated by the carrier, salvage shall be paid so

fully as if the salving ship was owned or operated by strangers. General Average shall be adjusted, stated and settled in any port or place elected by the carrier and according to York/Antwerp Rules 1950, except Rule 22 thereof. The General Average statement in every instance shall be prepared by average adjustors selected by the carrier. In average adjustments, disbursements in foreign currency shall be exchanged into any currency at the carrier's option at the rate prevailing at time of payment and allowances for damage to cargo claimed in foreign currency shall be converted at the rate prevailing on the last day of discharge at the port of final discharge of such damaged cargo. Such deposit, agreement or other security as the carrier or his agents may consider requisite to cover the estimated contribution of the goods and any salvage and special charges thereon shall be made by the goods or shippers to the carrier, if required, before delivery. Any deposits shall be payable at carrier's option in the currency indicated on each occasion by the carrier pending settlement of the General Average. Refunds of credit balance shall be paid in the same currency. It is understood that in every instance the shipper shall remain responsible until the statement of average has been settled. * * * "

11. Loading of the soybean oil was completed at 1210 hours on October 29, 1967, and the HELLENIC SAILOR then shifted to the Florida Avenue wharf to discharge inbound cargo and to load additional outbound general cargo.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

12. Commencing at 0800 hours on October 31, 1967, various other shippers shipped on board the HELLENIC SAILOR certain shipments of general cargo for transportation to Port Sudan, Karachi, Colombo, and Chittagong. (See Plaintiff's Proposed Findings of Fact and Conclusions of Law in 71 Civ. 2865 TPG.)

13. Loading was completed at 1700 hours on October 31, 1967, and at 1945 hours the HELLENIC SAILOR sailed from New Orleans partially laden with outbound cargo and proceeded on her voyage via Houston, Jacksonville, Philadelphia and New York loading additional outbound cargo. (See Plaintiff's Proposed Findings of Fact and Conclusions of Law in 71 Civ. 2865 TPG).

14. At approximately 0520 hours on November 19, 1967, the HELLENIC SAILOR weighed anchor and sailed from New York laden with approximately 7,817 tons of cargo bound for Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong and Calcutta.

15. As of and prior to October 31, 1967 when the HELLENIC SAILOR sailed from New Orleans, Hellenic took such steps as would be reasonably prudent to assure that the HELLENIC SAILOR was seaworthy for the contemplated voyage, including with respect to her main engine.

16. At 0447 hours on December 24, 1967, while engaged in performing the voyage contemplated and called for by the aforesaid bill of lading, when the HELLENIC SAILOR was approximately 120 miles NNE of Massawa enroute

to Jeddah, her first port of discharge, at a position of 17° 30′ N, 40° 00′ E, the vessel's main engine was stopped by the engineers on watch due to heavy knocking.

17. Thereafter it was found that the No. 2 after side rod crankshaft web was fractured and it was not possible by the means available on the vessel to restore operation of the main engine.

18. The HELLENIC SAILOR drifted without power until 0930 hours on December 25, 1967 when at 16° 59′ N, 39° 56′ E the vessel's anchor caught securely at a depth of 45 fathoms.

19. The services of the Sudanese tug TAWARTIT, located at Port Sudan, were engaged by the Master to tow the disabled HELLENIC SAILOR to Port Sudan, a port of refuge. The HELLENIC SAILOR was taken in tow by the TAWARTIT at 1632 hours on December 26, 1967, and tug and tow proceeded to Port Sudan.

20. At 0040 hours on December 29, 1967, the HELLENIC SAILOR was moored alongside a dock at Port Sudan.

21. As a result of this casualty certain extraordinary expenditures of a general average nature were made or incurred by Hellenic for the common benefit and safety and preservation of the HELLENIC SAILOR and her cargo, and for the completion of the common venture.

22. Under the terms of the aforesaid bill of lading Hellenic declared a General Average and caused the shippers or owners of the bulk soybean oil in the vessel's deep tanks to be advised that the cargo was required to contribute with Hellenic in general average.

23. On January 13, 1968, the HELLENIC SAILOR was towed to an anchorage in the harbor of Port Sudan where she was joined on February 13, 1968 by the M/V HELLENIC GLORY, another general cargo vessel operated by Hellenic.

24. At 1400 hours on February 14, 1968, transshipment of the HELLENIC SAILOR's general cargo, with the exception of general cargo destined for Port Sudan and the bulk soybean oil insured by defendant Life Insurance Corporation of India herein, was begun onto the M/V HELLENIC GLORY.

25. At 0640 hours on February 24, 1968, the transshipment of all the HELLENIC SAILOR's general cargo destined for Jeddah, Aden, Karachi, Colombo, Chittagong and Calcutta was completed and at 0700 hours the HELLENIC GLORY sailed from Port Sudan and thereafter delivered the HELLENIC SAILOR's cargo to destination charging no additional freight therefor.

26. Later that day the HELLENIC SAILOR was towed to a dock and between 1135 hours on February 24 and 1100 hours on February 26, 1968 her general cargo destined for Port Sudan was unloaded after which she was towed back to an anchorage.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

27. Pursuant to written agreement dated April 29, 1968 Hellenic engaged the services of the motor tug JUNAK to tow the HELLENIC SAILOR from Port Sudan to Bombay, a second port of refuge, so that permanent repairs could be effected by replacement of the fractured No. 2 crank.

28. On May 7, 1968 the HELLENIC SAILOR was taken in tow by the tug JUNAK for Bombay where tug and tow arrived on May 25, 1968, and the HELLENIC SAILOR anchored.

29. At 1640 hours on May 28, 1967 the HELLENIC SAILOR was moored alongside Alexandria Dock No. 18 at Bombay to discharge the bulk soybean oil cargo herein.

30. At 2113 hours on May 28, 1968 unloading of the soybean oil was begun and was continued until 1640 hours on May 31, 1968 when delivery of the soybean oil cargo was completed.

31. Pursuant to and in accordance with the terms of the aforesaid bill of lading, Despard International, Inc., average adjusters at the Port of New York, adjusted the average and prepared a Statement of General and Particular Average dated November 15, 1970.

32. The Statement of General and Particular Average was duly prepared by Despard International, Inc. A copy of said General Average Statement was delivered to the defendant herein and/or its representative prior to the commencement of this suit.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

33. A true and complete schedule of charges and expenses incurred by the HELLENIC SAILOR's owner as a result of said casualty is set forth following page 55 of said Statement of General and Particular Average.

34. The charges and expenses set forth in the Statement of General and Particular Average dated November 15, 1970 are all correct and reasonable.

35. As appears from the Statement of General and Particular Average the amount due from defendant Life Insurance Corporation of India for general average contributions with respect to the soybean oil shipment, identified therein as Interest No. 701, is $77,874.50, of which the entire amount remains unpaid.

36. Counsel for defendant Life Insurance Corporation of India was directed by the United India Fire & General Insurance Company Limited, after issue was joined herein, to advise this Court that pursuant to a statute promulgated by the Government of the Union of India after issue was joined said defendant ceased underwriting general insurance business from January 1, 1973 and its liability to Hellenic under defendant's general average guarantee was transferred to Oriental Fire & General Insurance Company, Bombay. The Oriental Fire & General Insurance Company Limited has consented to the jurisdiction of this Court and the caption of this action is amended to include Oriental Fire & General Insurance Co., Ltd. as an additional party defendant. (Stipulation of Counsel.)

Plaintiff's Proposed Findings of Fact and Conclusions of Law

CONCLUSIONS OF LAW

1. The Court has jurisdiction of plaintiff Hellenic Lines Limited, defendant Life Insurance Corporation of India and defendant Oriental Fire & General Insurance Co., Ltd. and the Court has jurisdiction of the subject matter of this controversy.

2. As to the soybean oil cargo herein, Hellenic exercised due diligence at New Orleans where the shipment was lifted to make the HELLENIC SAILOR seaworthy. *Mississippi Shipping Co.* v. *Zander and Company*, 270 F.2d 345 (5th Cir. 1959), 273 F.2d 618 (5th Cir. 1960).

3. The Statement of General and Particular Average prepared by Despard International, Inc. complied with the applicable provisions of the respective bills of lading referred to therein including New Orleans/Kandla Bill of Lading No. 1 and correctly set forth in detail the interests involved and correctly stated and apportioned all charges among the various interests at risk.

4. Defendants herein are liable to pay to Hellenic the sum of $77,874.50 set forth in said Statement of General and Particular Average and charged against Interest No. 701, and plaintiff is entitled to judgment for said amount together with interest from November 15, 1970 and costs of this proceeding.

Plaintiff's Proposed Findings of Fact and Conclusions of Law

Dated: New York, New York
December 21, 1973

Respectfully submitted,

BURLINGHAM UNDERWOOD & LORD
Attorneys for Plaintiff

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[Affidavit of Service by Mail omitted in printing.]

Defendant's Proposed Findings of Fact and Conclusions of Law

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ 3221

[Caption Omitted]

FINDINGS OF FACT

1. Defendant incorporates by reference the proposed findings numbered 1 through as appear in the companion case *Hellenic Lines Limited* v. *Aetna Casualty & Surety Company, et al.*, 71 Civ 2865 TPG.

2. On the voyage in question, the HELLENIC SAILOR carried on board a bulk cargo of liquid soybean oil which was destined for Kandla which port is some 100 miles from the port of Bombay in India.

3. On May 7th, 1968 the HELLENIC SAILOR departed Port Sudan for Bombay in tow of the tug JUNAK.

4. The vessel went to Bombay for the purpose of effecting permanent repairs where it also discharged the Kandla cargo.

5. No other port was convenient to owner for making permanent repairs.

Defendant's Proposed Findings of Fact and Conclusions of Law

6. The replacement crankshaft section was not shipped to Bombay until May 4th, 1968 at which time it was loaded upon board the vessel STATE OF MYSORE.

7. The replacement shaft section for the HELLENIC SAILOR's crankshaft arrived at Bombay on June 23rd, 1968. The reason that the vessel remained at Port Sudan rather than at Bombay pending delivery of the crankshaft was because a dock was not available at Bombay at which the ship could wait for the crankshaft.

CONCLUSIONS OF LAW

1. Defendant incorporates by reference the proposed conclusions numbered 1 through 5 and 7 as appear in the companion case of *Hellenic Lines Limited* v. *Aetna Casualty & Surety Company et al.*, 71 Civ 2865 TPG.

2. In any event, since the Kandla cargo did not benefit by the trans-shipment of the dry cargo at Port Sudan it should not contribute in general average to such expenses. York-Antwerp Rules, 1950.

3. In any event, since the HELLENIC SAILOR remained at Port Sudan for its own rather than the cargo's convenience, the Kandla cargo should not contribute in general average to detention expenses at Port Sudan. *Ibid.*

4. In any event, and since the towage to Bombay was for the purpose of effecting permanent repairs to the vessel, there was no sacrifice as to such towage, in consequence of

which the Kandla cargo should not be required to contribute in general average to the towage and related voyage expenses. *Ibid.*

5. In any event, since a full crew complement is not required for a vessel under tow, the Kandla cargo should not contribute in general average to such crew expenses. *Ibid.*

Dated: New York, New York
January 11, 1974

Respectfully submitted,

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Attorneys for Defendants

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Stipulations of Fact

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

71 Civ 2865

[Caption Omitted]

71 Civ 3221

HELLENIC LINES LIMITED,

Plaintiff,

—against—

LIFE INSURANCE CORPORATION OF INDIA,

Defendant.

IT IS HEREBY STIPULATED AND AGREED by and between counsel for plaintiff and counsel for all defendants in the captioned suit that the following facts are not in issue. The parties incorporate by reference herein the following:

1. Proposed findings of fact of plaintiff in case 71 Civ 2865 numbered 1, 2, 7, 8, 9, 11, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 30, 31, 32, 33, 39, 43, 45, 47, 48, 49.

2. Proposed findings of fact of defendants in case 71 Civ 2865 numbered 2, 3, 4, 11, 18, 21, 35, 38.

Stipulations of Fact

3. The HELLENIC SAILOR arrived at Savannah, Georgia on October 5, 1967.

4. On October 7, 1967, the HELLENIC SAILOR sailed from Savannah enroute to Charleston and New York, arriving at Charleston later that day.

5. On the morning of October 16, 1967, the HELLENIC SAILOR was taken to the facilities of Bethlehem Steel Corporation at Hoboken, for drydocking.

6. Loading was completed at 1700 hours on October 31, 1967 and at 1945 hours the HELLENIC SAILOR sailed from New Orleans for Houston.

7. It is hereby stipulated and agreed that Interest No. 21 will be deemed included in plaintiff's proposed finding No. 27 in case 71 Civ 2865.

8. The HELLENIC SAILOR arrived at New York on the afternoon of November 14, 1967 and berthed on the north side of Hellenic's terminal at the Foot of 57th Street, Brooklyn.

9. At 0447 hours on December 24, 1967, when the HELLENIC SAILOR was approximately 120 miles NNE of Massawa enroute to Jeddah, the first port of discharge, and at a position of 17° 30′ north, 40° 00′ east, the vessel's main engine was stopped by the engineers on watch due to heavy knocking.

Stipulations of Fact

10. Thereafter, it was found that the No. 2 after side rod crankshaft web was fractured.

11. The services of the Sudanese Tug, TAWARTIT, located at Port Sudan, were engaged by plaintiff to tow the HELLENIC SAILOR to Port Sudan. The HELLENIC SAILOR was taken in tow by the said tug at 1632 hours on December 26, 1967 and tug and tow proceeded to Port Sudan.

12. Hellenic declared a general average and caused the shippers or owners of the vessel's cargo to be advised that the cargo was required to contribute with Hellenic in general average.

13. On January 13, 1968, the HELLENIC SAILOR was towed to an anchorage in the harbour of Port Sudan.

14. On February 14, 1968, the M. V. HELLENIC GLORY another general cargo vessel operated by Hellenic came alongside the HELLENIC SAILOR at that anchorage.

15. At 0640 hours on February 24, 1968 the transshipment of all the HELLENIC SAILOR general cargo destined for Jeddah, Aden, Karachi, Columbo, Chittagong and Calcutta was completed and at 0700 hours the HELLENIC GLORY sailed from Port Sudan and thereafter delivered the HELLENIC SAILOR's cargo to destination.

16. Hellenic engaged the services of the Motor Tug JUNAK to tow the HELLENIC SAILOR from Port Sudan to Bombay, so that permanent repairs could be effected by the replacement of the fractured No. 2 crank.

Stipulations of Fact

17. Despard International, Inc. average adjusters at the port of New York prepared a document entitled, "Statement of General and Particular Average" dated November 15, 1970.

18. A copy of said "Statement of General and Particular Average" was delivered to the defendants herein and/or their representatives prior to the commencement of these suits.

19. A *prima facie* true and complete schedule of charges and expenses incurred by the HELLENIC SAILOR's owner as a result of the casualty is set forth between pages 53 and 211 of said "Statement of General and Particular Average."

20. The HELLENIC SAILOR was built in 1939 by Sun Shipbuilding Company of Chester, Pa. Its engine was a diesel of the kind commonly known as Sun-doxford.

21. On or about October 11, 1967, Hellenic employed Golten Marine Co. Inc., (hereinafter referred to as "Golten") to determine the alignment of the HELLENIC SAILOR's main engine crankshaft using the wire gauge method. Golten then prepared a chart dated October 11, 1967, showing that the shaft had a sag of .032 of an inch at main bearing No. 2, .042 of an inch at main bearing No. 3, and .032 of an inch at main bearing No. 4.

22. On October 31, 1967, at about 2100 hours while the vessel was proceeding through the Industrial Canal at New

Orleans into the Mississippi River, she touched the bank of the said canal on her starboard side causing the vessel to list about 10° to the port.

23. The master reported this incident to his New Orleans office by letter dated October 31st, 1967. At the same time he also requested his New Orleans office to advise his New York office of the incident.

24. By inter-office memorandum dated November 2, 1967, the master's letter concerning the October 31st incident was transmitted by Hellenic's New Orleans office to its New York office. The memo was received at New York on November 4, 1967. Mr. P. Callimanopulos routed the November 2nd memo and the captain's letter to Mr. G. Hennessy who was the manager of Hellenic's claims department.

25. The vessel arrived at Port Sudan on or about December 29, 1967. The following day, the master proceeded to the Port Sudan Port Authority and filed a note of protest.

26. Allan was sent from New York to Port Sudan and he attended on board the ship on January 2, 1968 while the vessel was at Port Sudan.

27. Allan devised a plan to effect a temporary repair. In this connection, the vessel's chief engineer M. Evangelou, was dispatched to Piraeus on January 6th, 1968. He took with him a template and drawings which were to be used at Piraeus for the purpose of forging a solid steel strongback.

This strongback was to be applied to the fractured crankshaft web.

28. The metalock repair was abandoned when a fracture was found in the fillet of the journal pin.

29. Repairs to the vessel's main engine crankshaft were completed at Bombay on or about August 22, 1968.

30. On August 16, 1968, Chief Engineer Evangelou took a wire gauge reading of the vessel's crankshaft after it had been repaired. The shaft alignment as reflected in that reading was 0 at No. 4 main bearing, .001 of an inch at No. 3 main bearing and .002 of an inch at No. 2 main bearing. Further work was done on the main bearings. The revised and final reading after this work showed that the crankshaft was sagged as follows: .003 of an inch at No. 4 main bearing, .004 of an inch at No. 3 main bearing and .004 of an inch at No. 2 main bearing. At these times the vessel's draft was 12′ 0″ forward and 15′ 0″ aft.

31. During the seven-year period just preceding the fracture of the vessel's crankshaft, the shaft was neither magnafluxed nor dye-checked.

32. Defendants in case 71 Civ. 2865 each insured certain shipments, identified in Schedule B annexed to the complaint and made part hereof, which were among those shipped by various shippers on board the M.V. HELLENIC SAILOR at Savannah, New Orleans, Houston, Jacksonville, Philadelphia and New York, respectively, for transporta-

tion to Jeddah, Port Sudan, Aden, Karachi, Kandla, Colombo, Chittagong, and Calcutta. Pursuant to their respective contracts of insurance each of said defendants became liable to their respective assureds to pay any proper general average contributions, salvage and special charges found to be due in respect of the shipments which they insured.

33. The shippers or owners of said shipments signed general average agreements wherein they undertook to pay all proper general average contributions, salvage and special charges for which said shipments should be liable, and defendants in case 71 Civ. 2865 signed general average guarantees wherein they guaranteed payment of all such general average contributions, salvage, and special charges for which the shipments insured by them should be liable.

34. At all times pertinent hereto, defendant Life Insurance Corporation of India was and still is a marine insurance company incorporated under the laws of the Union of India.

35. Defendant Life Insurance Corporation of India insured a shipment of 2,763.317 metric tons bulk crude degummed soybean oil shipped by Cargill Incorporated on board the M.V. HELLENIC SAILOR from New Orleans, Louisiana for transportation to Kandla, India and consigned to the State Trading Corporation of India. Pursuant to its contract of insurance defendant Life Insurance Corporation of India became liable to its assured to pay any proper general average contributions, salvage and special charges

found to be due with respect of this shipment which it insured.

36. Proposed finding of fact No. 8 of plaintiff in case 71 Civ. 3221.

37. Proposed finding of fact No. 9 of plaintiff in case 71 Civ. 3221.

38. Proposed finding of fact No. 10 of plaintiff in case 71 Civ. 3221.

39. On the voyage in question, the HELLENIC SAILOR carried on board a bulk cargo of liquid soybean oil which was destined for Kandla which port is some 155 miles from the port of Bombay in India.

40. Proposed finding of fact No. 6 of defendant in case 71 Civ. 3221.

41. The replacement shaft section for the HELLENIC SAILOR's crankshaft arrived at Bombay on June 23rd, 1968. A reason that the vessel remained at Port Sudan rather than at Bombay pending delivery of the crankshaft section was because a dock was not available at Bombay at which the ship could wait for the crankshaft section.

Stipulations of Fact

Dated: New York, New York
January , 1974

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Extracts From Testimony

[2] • • • • •

The Court: All right. We are trying together, and they will be considered consolidated for the purpose of trial, Hellenic Lines against Aetna in 71 CIV 2865 and Hellenic Lines against Life Insurance Corporation of India, 71 CIV 3221.

• • • • •

[5] • • • • •

Mr. Kritzalis: I also advised your Honor that our second principal witness, the former marine superintendent of the plaintiff, Mr. Charles Allen, a week ago Wednesday had suffered a blackout in his home, passed out, and was taken to the hospital where he was and still is. I represented to your Honor a possible cause of his blackout—I am not a medical man—I understand now he had a hiatus hernia and apparently his blackout was caused by internal bleeding, although no malignancy was found, and therefore he hopes to be out around by the end of this coming week.

[8] • • • • •

Mr. Kritzalis: If I may, sir, one of defendant's proposed conclusions of fact in the second case, 71 CIV 3221, and specifically proposed conclusion 36, conclusion of fact 36—

The Court: Now, this is plaintiff's or defendant's?

Mr. Kritzalis: This is plaintiff's finding of fact, proposed finding of fact 36 in the second of the two suits before your Honor.

The Court: All right. I'll get that. Starting out, "Counsel for Defendant Life Insurance Corporation" and so forth?

Mr. Kritzalis: That is correct.

The Court: All right.

Mr. Kritzalis: That proposed finding contemplated a stipulation among counsel. I believe your Honor will recall at the time we were before you on Wednesday the point raised to the effect that the plaintiff at least, and possibly counsel for the defendant, is not altogether sure of its status. I have in my hand a letter which I would like to offer, your Honor, dated March 23, 1973, to my opponent on the letterhead [9] of the United India Fire and General Insurance Company Limited, to Messrs. Donovan, Donovan, Maloof and Walsh, 161 William Street, New York, New York. The signature is illegible and I only have a photocopy, but if your Honor would look at that what I would like on the record if I may, from my adversary, is an agreement that the entity identified therein, namely the Oriental Fire and General Insurance Company of Bombay, be deemed joined as a party defendant in the second suit and the caption amended to include its name.

Mr. Kennedy: I would consent, your Honor.

The Court: All right, that's fine. Then I can give you this letter back. Now, what is the name again, Mr. Kritzalis?

Mr. Kritzalis: Of that additional defendant?

The Court: Yes.

Mr. Kritzalis: The Oriental Fire and General Insurance Company Limited, for purposes of the caption.

* * * * *

Harry T. Petsis—for Plaintiff—Direct

[10] • • • • •

HARRY T. PETSIS, called as a witness by the Plaintiff, was duly sworn and testified as follows:

Direct Examination by Mr. Kritzalis:

Q. Mr. Petsis, by whom are you employed? A. By Hellenic Lines.

[11] Q. How long have you been employed by Hellenic Lines? A. Since 1956.

Q. In what capacity are you presently employed by Hellenic Lines? A. As a marine superintendent.

Q. As a marine superintendent? A. Marine superintendent, yes.

Q. Are you the top man in your department? A. Right.

Q. Presently? A. Yes.

Q. How long have you been in that position? A. Since 1970. The beginning of 1970.

• • • • •

[12] • • • • •

Q. Where is your office? A. At 39 Broadway, Manhattan.

Q. Has that been your office for the 20 years you have worked for Hellenic Lines? A. Yes.

Q. Do I understand your testimony that you became marine superintendent in 1970? A. Right.

Q. Prior to that time, who was Hellenic's marine superintendent? A. Mr. Charles Allen.

Q. Where was Mr. Allen's office? A. At 39 Broadway.

Q. Mr. Petsis, before joining Hellenic Lines, what did you do? A. I was in the Merchant Marine. Traveling in the Merchant Marine.

Q. Were you an engineer? A. Yes, as an engineer.

Q. And you were a seagoing engineer? A. Yes.

Q. What licenses did you hold? [13] A. I had a Greek license I got through the Greek College of Greece—

Q. You will have to speak up for the reporter and for the Court, Mr. Petsis.

The Court: I didn't get the answer to the question what licenses you have.

The Witness: I have a marine engineer's license for seagoing, oceangoing vessels.

The Court: Issued by what country?

The Witness: By Greece.

* * * * *

[15] * * * * *

Q. During the years from 1956 until 1970 when you say you became Hellenic's marine superintendent, could you tell us what your duties were? A. I was employed as a port engineer which duties are to supervise our fleet, in other words to the speed conception* and for the vessels in drydocking for the hold, inspect the engine for good performances and if something is found wrong we have to correct it. Then we are also following up the new [16] building program that we had.

* * * * *

Q. You testified that Mr. Allen was the head of the department. A. That is correct, yes.

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* Should be "speed, consumption."

Q. Between the time you joined Hellenic up until 1970? A. Yes, he was in charge. I was the assistant port engineer, he was the marine superintendent or the port engineer.

Q. Fine. Could you tell us what Mr. Allen's duties were with respect to yours, if they were different, and if they were not, tell us they were the same. A. Well, actually they were the same, but of course he was in charge. He had to make the decisions, the big decisions. Now, in cases that he was out of town, or I was out of town then he was alone, and sometimes of course you had, on and off, had some other engineers. And when Mr. Allen was out of town I was second in command to take over and make a decision in our office here in New York.

Q. How many vessels are presently in Hellenic Lines' fleet? A. 40. About 40.

[17] Q. What kind of vessels are they? A. Well, they are all general cargo, liners with 90 percent they are motor ships.

Q. A motor ship would be a diesel engine; is that right? A. Yes. We used to have also some steamships. Recently they have been sold. And we remain with—I have had, say, five or six only steamships.

Q. As of the middle of 1967, how big was Hellenic's fleet? A. Well, if I remember right, around 30.

Q. With respect to the vessels in the fleet, were all the vessels during the time you were an assistant to Mr. Allen superintended, if you will, out of the New York office? A. You mean when Mr. Allen was out—yes, all of them. Except, except some intercontinental vessels that they are trading between the U.K. and Europe. There are about

eight vessels or ten, but they don't come in United States. Otherwise all of them, they are coming United States.

The Court: Are you saying that the vessels that did not ever call at the United States were not superintended as to engineering out of New York?

The Witness: They are superintended by our Piraeus office, the ones that are not coming here. However, if there was any serious decision or any serious damage, or generally [18] speaking a serious problem, they have to take advice from our department. The have to telex from Piraeus to our department and the decision will be taken by us what to do.

• • • • •

[19] Q. Would part of your duties or the duties of a marine superintendent be flying to foreign ports if vessels were in mechanical distress? A. If it was a serious problem, yes. The man in charge has to go there. He is the most experienced. And he has to go there.

Q. Was this part of your duties? A. Yes.

Q. Was this part of Mr. Allen's duties when he was with you? A. Yes.

Q. Do you know when Hellenic Lines purchased the HELLENIC SAILOR? A. Yes, the vessel was purchased at 1954. I was not with the company then.

Q. Could you tell us what kind of a main engine the HELLENIC SAILOR has? A. She has a Sun Doxford.

The Court: Is that the name of the manufacturer?

The Witness: The name, yes, of the manufacturer. That is the name of the engine. Actually the name of

the manufacturer is Sun Shipyards at Chester, Pennsylvania.

The Court: When you say a Sun Doxford engine, it is a type of an engine; is that right?

[20] The Witness: This is the type, right, sir.

The Court: And it is made by Sun Shipbuilding?

The Witness: Correct, sir.

Q. Mr. Petsis, what are the characteristics, in brief, of a Sun Doxford, or Doxford engine? A. Well, a Doxford engine is built in England, the original license is there in England, which they are smaller engines regarding the Sun Doxford.

Q. Is it your testimony that there are British Doxfords and Doxfords built in America by Sun Shipbuilding? A. Yes.

• • • • •

Q. Could you tell us what the characteristics are of any Doxford? A. Well, they are all the same in principle.

Q. What is the principle? A. Well, they are double-opposed engines. Each cylinder consists of two pistons—

• • • • •

[21] A. And the difference between the Doxford of England and here, as I stated before, they are bigger engines, the Sun Doxford, in diameter, and heavier engines.

The Court: Which is bigger and heavier?

The Witness: Sun Doxford.

The Court: The ones built here?

The Witness: The ones built here, yes, sir.

Q. Mr. Petsis, how many connecting rods would service each cylinder in the Doxford engine? A. We have the center connecting rod and we have the side connecting rod.

Q. How many side connecting rods? A. Two.

The Court: So it is a total of—

The Witness: Actually it is a total of four, then we have a lower connecting rod on the piston center and we have an upper connecting rod.

* * * * *

[22] The Court: Let's have the big chart marked and the smaller one.

The bigger one will be Plaintiff's Exhibit 1-A for identification and the smaller one will be Plaintiff's Exhibit 1-B for identification.

* * * * *

The Court: What are these, are these cylinders?

* * * * *

[23] Mr. Kritzalis: Your Honor, the horizontal piece you see is the crank shaft from forward to aft of the engine room. In other words, the right-hand side of the diagram would be the forward end of the crank shaft, the aft side of the diagram.

The Court: What is up above?

Mr. Kritzalis: — ould be the aft side of the diagram. Up above are each of the four cylinders.

The Court: So we've got cylinders and crank shaft.

Mr. Kritzalis: Cylinders, crank shaft, we have pistons, each cylinder with two pistons.

The Court: All right, I just wanted to get something.

* * * * *

The Court: We'll call this a schematic of Doxford Engine, and we'll have the large one as Exhibit 1-A and the [24] small one as 1-B. And you are offering 1-A and 1-B; is that right?

* * * * *

(Plaintiff's Exhibits 1-A and 1-B received in evidence.)

* * * * *

[25] * * * * *

The Court: In other words, Exhibit 1-B is the schematic without any markings and I guess the record can show that any markings are the fault of the Court and no one else.

* * * * *

Q. Now, by addressing yourself to that diagram beginning from the bottom part of it, working upward, could you identify for us and for the Court the components of that four-cylinder [26] Doxford engine as shown on Plaintiff's Exhibit 1-A in evidence? A. Yes. Starting with the crank case which the crank case begins from here—

The Court: I'll tell you what you had better do. Mr. Kritzalis, do you object if the witness marks on Exhibit 1-A?

Mr. Kritzalis: Not at all.

* * * * *

Q. Mr. Petsis, what the Court is trying to tell you is that whenever you say the word "here," the reporter can't pick it up on the record. So that you must either write, label, or else clearly identify with respect to other components of the engine. A. From "A" it's the top, the top of the crank case.

* * * * *

The Court: And that marks— All right, go ahead.

The Witness: Both sides "A." To "B" forward and "B" afterward. These four letters represent the entire crank case, a forward and aft. "B" forward and aft.

[27] The Court: Now, the forward is the left-hand side; is that right?

The Witness: The forward looking on it it is the right-hand side.

The Court: The right?

The Witness: Yes. The forward part.

The Court: And the aft, of course, is the left?

The Witness: Yes, sir.

Mr. Kennedy: Would it be easier, your Honor, if the witness marked "Forward" and "Aft" on the diagram?

The Court: Why don't you do that?

The Witness: Yes, sir.

Mr. Kritzalis: If I may, your Honor, I have at this juncture two additional offers which may put the matter together in clearer perspective.

The Court: Just let me see— Now you have marked by the two "A's" and the two "B's," you have

marked the boundaries of what you call the crank case?

The Witness: Correct. Yes, sir.

The Court: All right.

* * * * *

[28] * * * * *

Mr. Kritzalis: I would like to ask the witness to identify, if he could, Plaintiff's Exhibit No. 3 marked for identification (handing).

The Witness: General arrangement plan of the M/S HELLENIC SAILOR, Drawing No. 177-700A-A.

* * * * *

[29] * * * * *

Q. Mr. Petsis, could you proceed with your description of the components of the main engine? A. Yes.

Q. You have identified, I believe, up to this point the area of the crank case. A. Correct. And the forward and after part. Now we are proceeding with the bottom of the crank case. I will make a red line all the way, which they call the—this is the bottom of the crank case which is the top of the double bottom tank which is the—

Mr. Kritzalis: Could he transliterate the Greek word, your Honor?

The Court: I had to struggle with double bottoms. Is there something called the tank tops?

The Witness: This is the tank top, but—this is the bed plates, that's what they call it.

The Court: In other words, the bottom of the crank case rests on the bed plates, or is the bed plates?

The Witness: Actually, the bed plate, they rest on the tank top.

* * * * *

[30] * * * * *

The Court: Excuse me a minute, Mr. Kritzalis. I don't know whether this is relevant, but I still would be interested.

The very bottom of the ship, the skin of the ship, above that you usually have a kind of shallow—

The Witness: You have double bottoms all the way.

The Court: Double bottoms, and then above the double bottoms is a plate, or plates, and you call those—

The Witness: Bed plates.

The Court: —the tank tops.

The Witness: Yes, this is the tank tops.

The Court: All right.

Q. Mr. Petsis, referring to Plaintiff's Exhibit No. 4 marked for identification, would you show us where the tanks, or tank top that you have identified, can be found on that exhibit? A. This is fresh water No. 4 double bottom.

The Court: In other words, where it says "Fresh Water," those spaces are called double bottoms; is that right?

The Witness: Double bottom; correct.

Those spaces here, here, here. In other words, all [31] the way from the forward part of the vessel, which is the fore peak, the fore peak it is usually higher, then we are going to No. 1 port and starboard double bottom, No. 2 port center and starboard, then we are going to No. 3, then we are going to No. 4 and possibly this is No. 4 in way of engine room. Then we are going to No. 6 and 7.

Mr. Kritzalis: If your Honor would like, may I have the witness mark those that he's identified?

The Court: Maybe I got this too broadened out. I don't know that you have to. I just wanted to know what a double bottom is.

If your case needs him to mark all that, go ahead and do it. I think they are pretty well marked.

Mr. Kritzalis: For present purposes I think the witness need only mark the one in the way of the engine spaces.

* * * * *

Q. Just make it with letters.

The Court: That's where it says "Fresh Water"; is that right?

The Witness: Yes, this is fresh water double bottom.

The Court: All right.

Q. Would you mark those with a letter "X"? [32] A. I will mark them with the letter "X".

Q. Moving upward from that area which you have marked with two letters "X", what would be the top of the double bottom? A. The bed plate.

Q. What would be the top of the double bottom? A. The tank top plate.

Q. Fine. What would be on top of the tank top? A. It would be the bed plate.

Q. Is there one bed plate? A. And then we have in between the entablature.

The Court: You've got the tank tops is Plate G; is that right?

The Witness: Yes.

The Court: And then above that somewhere are the bed plates. And is there something between the tank tops and the bed plates?

The Witness: Above the bed plates is the entablatures.

* * * * *

The Court: A single bed plate; is that right?

The Witness: Yes.

[33] Q. Now, would you show us on Plaintiff's Exhibit No. 1 in evidence the bed plate?

* * * * *

The Witness: I will put an "X"; right?

* * * * *

A. Below each journal.

* * * * *

The Court: Excuse me. Let me interrupt you.

The tank top is that cross-hatched thing at the very bottom of the picture?

The Witness: Right. Right below here, yes.

The Court: We are talking about Exhibit 1-A in evidence.

All right, go ahead.

The Witness: Then we are proceeding with the main journals.

The Court: But I don't know what— You've got the [34] tank top and where is the bed plate?

* * * * *

The Witness: Well, then, here, all the way where I put the mark, is the bed plates.

Q. In other words, this cross-hatched line along the bottom of Plaintiff's Exhibit 1-A is the bed plate? A. Yes. And then we have the entablature? A. Yes.

* * * * *

The Court: And where is the entablature? Is that what you have marked as "X"?

The Witness: Yes, that is below the journal.

Q. Is there one entablature or more than one entablature? A. There's 1, 2, 3, 4, 5.

Q. Would you mark each of the entablatures with an "X" please? [35] A. Yes.

Q. Now, Mr. Petsis, moving upward from the entablature, would you tell us what we see on Plaintiff's Exhibit 1-A? A. It is the main journals, which is part of the

crank shaft and the main journals, they do rest on the entablatures.

Q. Do they rest on the entablature itself or does something rest between the main journal and the entablature? A. Between them there is what they call the main bearing, which consists of a hard shell and white metal, white soft metal.

The Court: All right, now, just a minute.

Between the entablatures and the main journals there is what again, please?

The Witness: Main bearing, which consists of two halves, one bottom half and one top half.

Q. Now, would you stop at that point, Mr. Petsis, and show us where the bottom half of the main bearings are on Plaintiff's Exhibit 1-A?

* * * * *

A. I will mark it "C." And above it, the thin line—

Q. Mark all the bottom halves of the main bearings with a letter "C" if you will. [36] A. Right.

Q. Now, would you mark with a letter "D" the top halves of the main bearings? A. Yes.

The Court: Well, what is this space with the diagonal lines between "X" and "C"?

Mr. Kritzalis: Between the entablature and the bottom halves of the main bearings.

The Witness: This is the—now, right here it is reinforced steel to hold the entire crank shaft.

Q. Would that be a shell for the main bearing? A. Well, the shell actually it's about that, what I marked "C."

And in between "C" and the journal, the thin line here, it is the white metal that thrusts against the journal.

* * * * *

The Court: Wait. I am not clear.

Go over that again. What I want to know is what is this—let's mark it "Y." What is this thing?

The Witness: This is the continuation of the entablature.

* * * * *

The Court: So we will say "X" and "Y" and the entablature.

* * * * *

[37] * * * * *

The Court: Now, in between "C" and—the shell above "C" is what?

The Witness: Above "C", that thin line that shows the white metal which is the internal of the main bearing.

The Court: Internal?

The Witness: Yes, of the main bearing.

The Court: All right. Let's call that "W."

The Witness: This consists of white, soft metal.

* * * * *

[39] * * * * *

Q. Mr. Petsis, how is the top half of the main bearing fitted or held to the bottom half of the main bearing? Of each of the main bearings which you have identified as being five in number. A. Well, they are held by four bolts and nuts.

Q. Is there a strong back over the top half of the main bearing? A. Yes, there is a covering.

Q. Could you identify that cover on the drawing, if it is there? A. It is right here, like a capital "T." I would say like a capital horizontal "H."

Q. Why don't you mark it with a "T." A. Mark it with a "T" on top.

Q. All right. Mark all of them with a "T."

[40] The Court: Now, what is "T" again, Mr. Petsis?

The Witness: It is the top cover of the main bearing.

* * * * *

[41] The Court: Let's mark the web on the schematic.

The Witness: This is a web, and this is a web.

Q. Write out the word "Web."

The Court: Let's use initials.

Mr. Kritzalis: There are different kinds of web.

The Witness: There would be the main bearing web and this is the web between the—

The Court: Now, the first one you marked you are going to mark with "WE" what?

Mr. Kritzalis: "B."

The Witness: This is the web between the main journal—

Mr. Kritzalis: Mark the main journal with a "J." Mark all the main journals each with a "J."

Q. There are five main journals in number; is that right? A. Correct.

The Court: What is the other web?

The Witness: The web—right next to the journal is the web which is between the main journal and the side cross bottom end.

Q. Is that a connecting rod? A. Yes. Side rod connecting—side connecting rod.

• • • • •

[46] • • • • •

The Court: Let me go back to a point—

Mr. Petsis, go to the part just to the right of that web you marked with the "WEB."

The Witness: Right.

The Court: Now, you described it, and I simply didn't get it. What is the part to the right of the "WEB"?

The Witness: The web. This is the connecting rod—

The Court: This part here?

The Witness: Yes, this one is the connecting rod.

The Court: All right, let's mark that with something.

Q. Now, would you quickly write the word "Pin" on each pin that is depicted on Plaintiff's Exhibit 1?

Mr. Kennedy: Is each a connecting rod pin?

The Witness: Yes, sir.

• • • • •

Q. Would you antecede the word "Pin" on the connecting rod pin, on the word "Pin" representing connecting rod pins; in other words, put a "CR" in front of each of the words "Pin" you have written on Plaintiff's Exhibit 1. A. Well, I can put here "CR," which is the connecting [47] rod.

* * * * *

The Court: All right. And those are connecting rods?

The Witness: Yes.

Q. Now, are those connecting rods which you have identified with the initials "CR" side connecting rods? A. Yes.

Q. Would you therefore put before the letters "CR" the letter "S"?

Now, apart from the areas that you have identified with the word "Pin," are there other pins shown on Plaintiff's Exhibit 1-A in evidence? A. Yes.

Q. What kind of pins are those? A. You have the bottom end pins which are connected between the center crosshead and the connecting rod, the main connecting rod.

The Court: Let me just go back a step.

Now, next to the pin, if we take one of those connecting rod pins and we go to the right, we get to another [48] web, don't we?

The Witness: Yes. We had better go one by one, step by step.

The Court: So that's another web.

Q. Would you mark each of the webs found on Plaintiff's Exhibit 1-A in evidence?

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Mr. Toy: Is there any distinction between the two types of webs?

Mr. Kritzalis: So far, no.

• • • • •

The Court: Now, let's go into this bottom a little more, can we?

Q. Could you identify for us, Mr. Petsis, other pins on the drawing that haven't been previously identified? A. Yes, this is a bottom end pin.

The Court: A bottom end pin?

The Witness: That's right. So I can put it "BE Pin."

[49] Mr. Kritzalis: That's fine.

• • • • •

If I may, your Honor, may the witness also put the initials "CR" before the word "Pin" for the connecting rod pins? To facilitate matters?

The Court: All right.

That would be center connecting rod. We have called them connecting rod pins.

• • • • •

Mr. Kritzalis: May the record show that the witness has marked each of the side connecting rod pins with the initials "SCR."

The Court: All right. Now let's get to the bottom. Is that bottom end the whole mechanism below that bottom end pin?

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[50] • • • • •

Q. Are there any other bearings servicing the main engine crank shaft, and if so, are those depicted on Plaintiff's Exhibit 1-A? A. Yes. They are the side—this band, which are the side rod—the side connecting rod, bottom end bearings.

• • • • •

Q. Those are represented by the cross-hatch marking; is that correct? A. Yes.

The Court: Cross-hatch bottom side connecting rod pin; is that right?

The Witness: Correct, yes. Top and bottom.

[51] Q. Would there be a top half and a bottom half bearing? A. Yes.

Q. On each side of the pin? A. Correct.

The Court: Let's mark that in some way.

Mr. Kritzalis: May I suggest the initials "SCRB," above and below the "Pin"?

• • • • •

The Court: Let's get this bottom end pin bearing; what do we call that? "BEPB"?

Mr. Kritzalis: Fine.

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[52] • • • • •

The Court: What is the thing above the bottom end pin and the bottom end pin bearing? Is that called the bottom end?

The Witness: Bottom end, yes.

[53] The Court: And what is the bottom end?

The Witness: Actually it is the bottom end bearing of the center connecting rod. Which is shown here.

The Court: What is the center connecting rod?

The Witness: This is the center connecting rod.

• • • • •

The Court: All right, let's mark that "CCR."

• • • • •

Q. Would you mark the upper side connecting rods with [54] the letters "USCR." A. "USCR."

• • • • •

The Court: Then you've got lower side connecting rods which we have already marked.

Mr. Kritzalis: With the letters "SCR"—

The Court: We might add an "L" so it will be easier.

All right, add an "L."

• • • • •

Q. Now, would you write the words "Side Cross Head," and draw a horizontal arrow in the direction of all the side cross heads? Do you understand? A. Yes.

The Court: Just draw it to one of them. I think it is very nice of you to label everything, but if I

get one set of things labeled—let the record reflect that the witness has written "SC Head." Side cross head. All right, I've got it.

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[56] * * * * *

Q. Would you quickly label for the judge the transverse beam, if you know where they are? A. Right up here.

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[66] * * * * *

The Court: Could we go into—I don't mean to interrupt you but you probably don't know the questions that are on my mind. Could we go into the parts of this Exhibit 7-N? Now this is what web? This is a big web?

The Witness: Right. Between the—

The Court: Let's just put some symbols. "X" is the big web, is that right?

The Witness: That's right.

Mr. Kritzalis: It would be one of the two center webs.

The Court: Then this is a side web. "Y" is a side web, is that right?

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[69] * * * * *

The Court: Looking at Exhibit 7-P, he is pointing to a web. Which web is that?

The Witness: This one, the whole thing.

The Court: The big web?

Big web?

Mr. Kritzalis: That is the afterside rod web.

The Witness: This is a small web.

The Court: This is a big web or a small web?

The Witness: Small web. And next to it is the main bearing.

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[70] * * * * *

Q. Mr. Petsis, I believe you testified that Hellenic, during your period of service, has or had four Doxford engines, two British and two Sun Doxford, is that correct? A. That's correct.

Q. Would you briefly highlight in terms of the diagram the differences between the British design and the American, or the Sun shipbuilding design?

[71] The Court: Let me get there now. Is this necessary? What is the significance in knowing the difference between the British and the American? We had an American here.

Mr. Kritzalis: Subject to connection, your Honor, the designs are such, if I may, that the British design, you will hear testimony, you will hear expert testimony that the British design had spherical main bearings as well as all the other bearings being spherical. Now there is a reason why the bearings were spherical and I would rather let the engineers tell you rather than—

The Court: What's that have to do with our case?

Mr. Kritzalis: It has a lot to do with our case, your Honor.

The Court: All right. Then let me get this now, the number of British engines—

Q. Would you identify for the Court the names of the two vessels—

The Court: I didn't get a note. When you asked him, the answer you gave before as to how many of each kind I didn't get a note. I would like to get that.

The Witness: We have two of each kind.

The Court: Right now?

The Witness: Two—yes, two built in England and one built in Sun shipyard and the other in Montreal, [72] Canada under the licenses of Sun Doxford.

The Court: Now you have the two British?

The Witness: Two British and two American. Two Doxford and two Sun Doxford.

The Court: All right.

Q. Mr. Petsis, if I may, was that as of May, 1967? A. Yes.

Q. Does Hellenic Lines still own the HELLENIC SAILOR? A. We just sold last August, if I recall. Either August or September it was sold.

Q. August or September of 1973, is that correct? A. That's correct.

Q. Let me ask you this question, Mr. Petsis, quickly, what are the names of the two British Doxfords that Hellenic owned as of 1967? A. HELLENIC GLORY and HELLENIC TORCH.

The Court: Those are the British, is that right?

The Witness: Right.

Harry T. Petsis—for Plaintiff—Direct

Q. Apart from the HELLENIC SAILOR what was the name of the other—the Canadian-built Doxford? A. MOTOR VESSEL ITALIA which is identical engine.

The Court: I didn't get the name of that.

The Witness: ITALIA. MOTORSHIP ITALIA, I-T-A-L-I-A.

[73] The Court: I have one of the American-built Doxfords, is that right?

The Witness: With a license, yes, American license, it was built by Vickers in Canada, Montreal.

The Court: But it is what you call the American Doxford?

The Witness: That is correct, sir.

The Court: Who else had the American Doxford, the SAILOR?

The Witness: HELLENIC SAILOR, yes.

Q. Now, insofar as this diagram is concerned, could you tell us what principal differences between the British design and the Sun design are? A. Well, the principal design is the same. However the American is the biggest in diameter. In diameter and stroke.

Q. Diameter of what and stroke of what? A. Of the cylinder.

Q. Stroke of the cylinders? A. Yes. And the diameter.

The Court: I am not clear. Bigger in diameter of what?

The Witness: Larger in diameter of the cylinder liner.

[74] The Court: The diameter of the cylinder liners?

The Witness: That's right, sir. And higher in stroke. If I remember right it is 94, the Sun Doxford, inches.

Q. Am I to understand that on a double opposed piston engine there is a combined stroke? A. Yes, it is a combined stroke. Yes.

Q. To put it simply, the top piston comes down and the bottom piston goes up? A. And you add both of them and you get the overall total.

Q. The distance. A. The distance, yes.

Q. Is it your testimony that the diameter of the piston and the cylinder is greater on the American design than on the British design? A. That's correct.

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[75] * * * * *

The Court: All right, now I don't understand how the stroke works though.

The Witness: Well the stroke it starts from here, the top piston and comes to a certain point here and then the bottom one from here, let's say, and it comes up to here somewhere and they leave a little space here, which is the combustion area.

The Court: But would you tell me very slowly, let's start with when they are back in the center, when the pistons are back almost to go with the little space then there is an explosion or combustion?

The Witness: Yes.

The Court: Then just take me slowly, what happens? Do you understand?

[76] The Witness: Yes. Both these pistons, they meet together somewhere here and leaving a little bit of space. In other words the crank shaft in that position where it is the bottom end pin, it goes all the way up here. The complete assembly goes up, the complete assembly, it goes from the top—that will be to remove the whole assembly up high and leave a little space.

The same happens with the top pistons. The whole assembly comes down and then it comes and leaves a little space here which we call the combustion area. But now from the top to the bottom that is what they call the stroke.

In other words the overall length, let's put it, we can describe it as overall length.

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[83] * * * * *

The Court: I think I have got that. Now is the name of the engine double—what is the name double opposing—

The Witness: Yes.

The Court: All right. And that refers to the pistons being thrown out away from each other?

The Witness: Right. As a rule in the marine engines I would say, 95 percent, or 98 percent of the marine engines they consist of one piston in each cylinder.

The Court: All right.

Q. Would you point on the diagram to the main bearings and number them from the forward end of the crank shaft to the aft end of the crank shaft as they would be numbered on the vessel?

Just take a red pen and do it, please. A. You want me to mark them?

Q. Yes, with a number. Just put it above the "T" and we will all know where it is. [84] A. All right.

> The Court: Excuse me, what are you numbering now, the cylinders?
>
> Mr. Kritzalis: Not the cylinders, your Honor, but the main bearings. We are going to do the cylinders next.

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[85] * * * * *

Q. Would you, Mr. Petsis, bracket with this orange pen, each of the four sections of the main engine crank shaft? Up here, just go like that. Now is it your testimony that what we have marked with a "J" moving from right to left with a "J" the word web, side connecting rod pin, web, bottom—

> The Court: In other words, he has drawn some boundaries of the first section. Now, why don't you draw a line across and we will label that somehow.

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[86] * * * * *

Q. Now, would you draw the boundaries of the other three sections, please? A. Here.

Q. Now would you identify with numbers in the same orange color one through four the sections, the crank sections?

The Court: Number one section is here (indicating). And number two.

Q. Mr. Petsis, so that we can complete our labeling of the diagram would you identify what appear to be holes just above the upper end of the lower pistons? A. Yes. You mean these holes.

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[87] • • • • •

Mr. Kennedy: Your Honor, I will note an objection at this time. Mr. Kritzalis has been leading the witness for most of the day in describing what is on the diagram. The witness is here to demonstrate, it seems to me, what he knows about the engine. And I would prefer that Mr. Kritzalis let the witness testify rather than suggest to him.

The Court: I would assume that most of this is well known. If there is some correction that has to be made. But this is just pretty much educational to me. It could have been done in a book or a pamphlet but it is being done this way which is perfectly all right. Now if there is something [88] that you know is wrong, why, let me know, but I think we could spend three times as much time if we didn't have a little leading. Now I want to know, exhaust ports are those—why don't you label the exhaust ports?

[89] • • • • •

Q. Now at the top of the diagram would you label one through four the cylinders so that we have that on the diagram? At the top of the diagram, from right to left, the numbers of the cylinders. A. Over here?

Q. Just above the cylinders. Each cylinder. Now, Mr. Petsis, I believe I asked you before the noon recess, or possibly just after, what difference was between the British design and the Sun design. And without getting into all the differences, with respect to the diagram before you could you tell us what difference, or principal differences if more than one are? A. Well, generally speaking the design is the same. However, the bearings in the Sun Doxford they have spherical only in way of the main journals, which is this, this, this, this and this.

On the Doxford—

The Court: I don't understand what you said. They have what on the main bearings?

The Witness: Spherical.

[90] Mr. Kritzal[illegible]herical.

The Court: Spheri[illegible] what?

The Witness: Spherical bearings which you have also to allow a spherical clearance.

The Court: So on the Sun Doxfords they have spherical bearings is that the way you say it?

The Witness: Right. Spherical bearings on the—

The Court: On the main bearings.

The Witness: On the main bearings only.
The Court: All right.

Q. Do diesel engines other than double opposed piston engines have spherical bearings or plain main bearings? A. No, they are all plain.

Q. They are all plain? A. And on the other Doxfords built in England all bearings are spherical.

Q. And that would include the main bearings and what other bearings? A. Main bearings, side rod bearings, center bearings—I mean center crosshead et cetera. All the bearings.

The Court: All bearings spherical. All right.
The Witness: Right.

Q. Now what, if you know, is the reason for spherical bearings in the Doxford design? [91] A. Well, it is generally speaking for the fluctuation of the hog and sag.

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Q. Do you know what length from front to back of each section is? A. From here to there—

Q. I am talking now about the diagram before you, Plaintiff's Exhibit 1-A in evidence. A. In other words each throw what is the overall length, what is the length of it.

Q. Correct. A. Well, I don't really remember. Maybe properly about 15 feet or so. Maybe the chief engineer remembers that.

Q. Do you remember? A. I don't remember, no.

Q. All right. A. If I had the main engine book I could find it out.

Mr. Kennedy: Did you say 50 or 15?

The Witness: I don't really remember—

Mr. Kennedy: I didn't hear whether you said 50 [92] or 15.

Mr. Kritzalis: 15.

The Court: 15? I thought it was 50. All right.

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[96] * * * * *

The Court: So you have got the thrust and then you have got five sections of shaft?

The Witness: Yes. If I remember right. It can be six but I think there are five.

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[104] * * * * *

Q. Now, Mr. Petsis, why would you use the alignment reading method as opposed to the deflection gauge method you previously described in connection with other than Doxford engines on this kind of a crank shaft?

[105] The Court: Wait. What are the names of the two methods you have just used?

Mr. Kritzalis: The alignment method, wire alignment, wire gauge method—

The Court: Wire gauge method. And the web measure?

Mr. Kritzalis: Web deflection method.

The Witness: Well, the reason we are using it is because first of all, they are very big webs and it is a big distance between web to web. It might be up to, if I recall right it might be up to eight or

ten feet distance between web to web. While with the other engines generally speaking, it might be three feet the maximum.

It starts from two feet to three feet and so on. But over here between main webs it is a big difference. So definitely the deflection is going to be too high.

Q. When you say over here, are you referring to the Doxford? A. To the Doxford, yes.

Q. Now what would account for the larger difference web to web which you say the Doxford has as opposed to the lesser difference web to web which you say that other than Doxford crank shafts have? A. Well, you will have —you have very small deflection on the regular diesel engines, the regular. But over here you [106] have very high deflection on account of the distance between here and here for example. You see it might be eight or two.

Q. My question to you is what accounts for the difference? A. The flexibility. The big flexibility on those crank shafts.

The Court: Well now, wait a minute. Suppose you were going to use the web deflection method on this piece of machinery? Point out what two webs you would measure between—

The Witness: Between this—

The Court: Would you measure the distance between a big web and a little web or two big webs?

The Witness: No, between two small webs.

The Court: Between two small webs.

The Witness: Yes, between journal. Between journal you measure it. So actually you have eight or ten feet, I would say, properly if I recall right, it is eight. While in the regular diesel engine you have about two and a half to three feet.

The Court: Two small webs, is that right?

The Witness: Yes. Between the large webs.

The Court: I didn't get that now. What would you measure? If you use the web deflection method, what would [107] you measure?

The Witness: You measure your between the small, I think it is—let me see. Actually, between —what we want to find is the webs between the main bearings and then also between pins.

The Court: I don't know whether it is important but I don't understand the point because I don't understand what it would be doing, you see.

The Witness: One is the main bearings to see where it is and here from the time—

Q. Mr. Petsis—

The Witness: Excuse me. From the time they build those engines the deflection is extremely high. So in other words the manufacturer they told you you have to ignore the deflections on those engines, especially Sun Doxford and Doxford and they ask you to take the wire reading or any other system than deflection.

Q. But the Judge's question to you, Mr. Petsis, was this as I understand it: Earlier in describing the web deflec-

tion method, it was your testimony that you take a gauge and you put that gauge between two webs and you turn the crank shaft and you leave the gauge in the same position? A. Yes.

Q. Between the two webs. And you take the shaft and you [108] measure that distance at the two spots in four different positions. A. Yes.

Q. 360 degrees? A. Right.

Q. Now the Judge's question to you as I understand it is what webs are you measuring? A. Well, you are measuring between big webs.

Q. If you know. A. If I remember right between two—the two big webs. However, don't quote me on that, I am not sure.

Q. Now, Mr. Petsis— A. I would say mostly, I am sure about that, it should be between—

Q. Between the two big webs? A. Yes, I think I am quite sure about that.

The Court: Now let me follow that through. On this engine which is so big the webs are big and the distance is large. Is that right?

The Witness: Right, from here to here, for example.

The Court: And you is it your testimony that you would expect on this engine to have quite a bit of deflection, in other words quite a bit of variation in that distance as the thing turned around?

[109] The Witness: That's correct.

The Court: And so you are saying it wouldn't be meaningful to measure your deflection because it is what you would have anyway.

The Witness: It wouldn't give it any guide. In other words it wouldn't give it the right picture of the crank shaft condition.

Q. Mr. Petsis, are you familiar with ship board practice with respect to internal inspections of the main engine? A. Yes. Saying internal, you mean inside the crank case.

Q. That's correct. A. Yes.

Q. Now would you describe briefly how such internal inspections might be performed on a vessel such as the HELLENIC SAILOR? In other words, physically. A. Yes. Well, the chief engineer who is in charge of course, he has to open a door and get into the engine.

Q. Now, where— A. Into the crank case.

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[110] * * * * *

Q. Now having removed those doors what else would be done? A. Well, then you have to check with the hammer all the mountings. That means all the coupling bolts, nuts, for tightness. You hit with a hammer and see if they are all tight. The bolt nuts are naturally the bearings that you see here and crossheads. In other words here on the main journal you have four—

The Court: What do you call those?
The Witness: Bolt nuts. B-o-l-t.
The Court: Bolt nuts?
The Witness: Yes.

The Court: And you are testing the tightness of those bolt nuts with a hammer?

The Witness: The tightness with a hammer, yes, sir. So you have quite a few. In other words here on the journal for example in each journal you have two at portside and two on the starboard side. The side crosshead you have one on each [111] side then the center bottom end you have two on each side makes four.

The Court: All right.

The Witness: And the crosshead and so on which is quite a few. That is number one he has to do.

Number two he has to see visually all the bearings also to see if there is any flakes of white metal or any lips of the metal. That is a bad sign, that means that something happens to that bearing.

And in cases like this you have to remove the bearing and see what is wrong with it.

* * * * *

Q. Would you tell us what the purpose of the white metal is? A. Well, the purpose of the metal is just to—that it is supposed to be soft and it gets in friction with the crank shaft with the journals or the pins, it is hard metal.

Q. You mentioned the words flakes and lip. A. Yes.

[112] Q. Now, how would flakes occur? A. If the bearing gets overheated or if one of the oil holes gets clogged. It will still get overheated.

Q. How would a lip form? A. It forms, it extends out of the bearing and you can see these.

Q. This would be white metal? A. White metal, correct, yes.

* * * * *

[126] Mr. Kennedy: That's right.

The Court: When was the thing manufactured?

Mr. Kennedy: 1939.

The Court: 1939. And how was the—when was this ship acquired by Hellenic?

Mr. Kritzalis: In 1954.

Mr. Kennedy: 1954.

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[154] * * * * *

The Court: How big is this web? What are the dimensions of the web? Well, anyway, I am sure you will go into this, I would like to know and I'm sure you are coming to it anyway. I would like to know as soon as I can, Mr. Kritzalis, the dimensions of the web and what the fracture involved. Did it involve a big cracking through, or—

Mr. Kritzalis: I believe the testimony—

The Court: —six feet long, or three feet long, or what?

Mr. Kritzalis: Here is another photograph, your [155] Honor (handing). I believe the proof will show, your Honor, that the dimensions of the fractured web were six feet by four feet by one foot, and that the fracture was all the way through.

The Court: And the six feet would be up and down?

Mr. Kritzalis: That is correct.

The Court: Now, was it fractured across four feet?

Mr. Kritzalis: It was fractured across the six-foot length of it. In other words, sideways.

The Court: All right.

Mr. Kennedy: Across the face, it would be. The face of the web.

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[156] • • • • •

Mr. Kritzalis: If I may, your Honor, I believe my colleague has advised me that I may have misspoken, your Honor. That assuming this were the ten-foot length—

The Court: Six foot.

Mr. Kritzalis: The six-foot length, and assuming this were the four-foot length and this were the one-foot width, the fracture occurred this way.

The Court: All right. I think that's what I got from you.

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Q. Mr. Petsis, I believe on Friday you testified with [157] respect to the pertinent characteristics of a Doxford opposed piston engine as opposed to other than Doxford opposed piston engines, and one of the pertinent characteristics you identified was spherical bearings. A. Yes.

Q. Is that correct? A. That is correct.

Q. Could you describe briefly the operation of spherical bearings such as found on the HELLENIC SAILOR with respect

to the main engine crank shaft? A. Let's assume that we have a ball, a hollow ball, and we cut it in half, we take that ball and put it on the bed plate and then take the other half on top and put it on top upside down, same way both of them. Above that is the journal, the journal rests, and above the journal it goes the same way, a ball, hollow, cut in two, and put them the other way towards downward. This is the spherical, what they call, and the purpose of it is to, in accordance with the flexibility of those engines that they have, the sphericals, they have to move accordingly.

Q. Now, do I understand your testimony to be that you take a ball, you cut it in half, and you—well, do you take the half and rest it facing which way? A. The top—facing the top.

[158] Q. Facing the top. Would that be the bottom half of the bottom bearing? A. Right.

Q. You take the other half and you place— A. Facing downward, yes.

Q. Facing downward. You put that in the bottom half? A. Right.

Q. So that you essentially have two hemispheres sitting in each other? A. Yes. And in between is the—on the journal, what do you call it, the surface of the journal, it works against the white metal which is in the bearing.

Q. Now, the journal sits in the topmost of those two spheres which each sit in each other; is that correct? A. That is correct.

Q. As I have my hands (indicating)? A. Correct.

Q. As I understand your testimony, then another hemisphere goes over the top? A. Right. And another one on the top.

Q. And another one on the top? A. Correct. And then—

Q. Wait, please. And the one on the top would be the strong back; is that correct? [159] A. The strong back, yes. And in between we have the spherical clearances, what they call, and then below that we have the oil clearances.

Q. Addressing ourselves solely to the spherical bearings and their operation with respect to the main engine crank shaft, the top part of the sphere would be the strong back; is that correct? A. Right.

Q. The secondmost level would be actually the top half of the main bearing; is that correct? A. Correct.

Q. Now, the bottom half facing upward would be the bottom half of the spherical bearing? A. Yes.

Q. Then the bottommost sphere would be the shell of the bottom half of the main bearing; is that correct? A. Correct, yes.

Q. And these all fit together and the journal sits in between. A. Correct.

Q. And that would be the same with respect to each of the five main bearings of the engine? A. That is correct.

Q. Now, how does the journal then operate, or fluctuate, [160] as you say? A. Well, there is a clearance as between the journal and the bearing which allows the oil to pass through, and then between the top of the main bearing and the strong back, what they call, there is another clearance which they call the spherical clearance. That's what makes it move according to the flexibility of the—

The Court: Let me get this. There are clearances between the journals and the bearings.

The Witness: Correct.

The Court: And there is oil in those clearances?

The Witness: We call it oil clearances, yes.

The Court: And then are there clearances between the top part of the bearings and the strong backs?

The Witness: Right. Which they call it spherical clearances.

The Court: And I take it there can be some movement between the journal and the bearing, and then again some movement between the bearing and the strong back; is that right?

The Witness: Between the top bearing and the strong back is a spherical moving, yes. Between the spherical clearances are the movements.

The Court: Well, there can be some movement between the journal and the bearing.

[161] The Witness: Yes.

The Court: What kind of movement? Horizontal movement or just rotating movement?

The Witness: Well, rotating is the—

The Court: Between the journal and the bearing.

The Witness: Well, it is forward to aft, put it this way. Like this, forward to aft, the movement of the spherical clearance.

The Court: Well, it can certainly move, it rotates, doesn't it?

The Witness: It rotates, the crank shaft rotates, yes.

The Court: All right. So there is movement, obviously, rotating movement.

The Witness: Yes.

The Court: Then you say there can be movement, linear movement, horizontal movement?

The Witness: Yes. It will go horizontal, yes.

The Court: Can you have a tilting movement also?

The Witness: Well, generally it has—I would say yes, because it is such a big engine and there is such flexibility.

The Court: In other words, it can—

The Witness: Yes, they go like this all the time.

[162] The Court: And you can have all three of those movements; is that right?

The Witness: Yes.

The Court: Now, can you have all three of those movements between the bearings and the strong back?

The Witness: Yes. These movements are between the bearing and the strong back.

The Court: Well, what I was asking you was between the journal and the bearing.

The Witness: Between the journal and the bearing there is a movement while rotates the crank shaft, rotates, that is the movement that it have, and also you find a little bit slight movement between the spherical.

The Court: No, just take it one step at a time. I am talking about the clearance between the journal and the bearing. Are you with me?

The Witness: Yes.

The Court: And we will postpone the question of the—

The Witness: Of the spherical.

The Court: —the sperical clearance. It is just this oil clearance. Now, obviously there can be rotation.

The Witness: Rotation, yes.

The Court: Between the journal and the bearing. [163] Is that right?

The Witness: Yes.

The Court: Now, what other kinds of movement besides rotation?

The Witness: It is forward to aft also.

The Court: Forward to aft?

The Witness: A little bit, yes.

The Court: A little bit. And then is there any tilting?

The Witness: It is tilting, yes, that's how it goes.

The Court: All right.

The Witness: And that reflects, of course, the spherical.

The Court: That is the result of the spherical clearance, isn't it?

The Witness: Yes. In between.

The Court: All right.

The Witness: In between the main bearing and it.

The Court: All right.

Q. Now, Mr. Petsis, as the main journal sits in both the bottom half and the top half of the main bearing, is it correct to say that the entire surface of the main journal is [164] in contact, granted a layer of oil, of lubricating oil, with the entire surface of both the top half and the bottom half of the main bearing? A. Yes. Except that there is a clearance on the top.

Q. I am talking now just about the main journal and just about the bearings. A. Yes.

Q. And I am talking about a layer of oil that oil is all around the— A. Yes, it goes all around.

Q. Isn't it a fact that the entire surface of the main journal as it sits in the top half and bottom half of the main journal is in contact with the bearings? A. Yes, it is. And the oil goes through.

The Court: Excuse me, Mr. Kritzalis. Why don't you, going back to the marking of the area of the fracture, you could take a marking pencil and make that circle heavier and then just put an arrow and say "Fracture," so we have that defined. It doesn't mean it is the exact spot, it is just the area.

That's fine. Thank you.

[168] * * * * *

Q. Mr. Petsis, apart from the hammer testing of the bolt nuts, are there any other inspections performed inside the main engine now, speaking with respect to the main bearings and the main engine crank shaft? A. Yes. He has to inspect all bearings and check if there are any flakes of white metal or any lips of white metal.

Q. Where do the flakes of white metal come from?

The Court: Didn't we go into that Friday?

[169] Mr. Kritzalis: All right.

The Court: I don't think we have to repeat it.

A. Then he has to take his feeler gauge and go all through the bearings also, all bearings, to find the clearances, if it is the desirable clearances.

The Court: What kind of a gauge?

The Witness: Feeler gauge, which shows thickness and all. I think we have one here.

The Court: What does he check with the feeler gauge?

The Witness: He checks the oil clearance.

Q. Is this a feeler gauge, Mr. Petsis (handing)? A. That is correct, sir.

Q. What clearances do you check with a feeler gauge? A. The oil clearances. It has to go through the bearings, he takes, for example, it goes all the way, and these are—each of these blades show eight, ten thousandths, sixth of an inch, five. Various thicknesses.

Q. You say he measures the lubricating clearances. Are there any other clearances he measures? A. Well, the spherical.

Q. The spherical clearances? A. Yes.

Q. And that is again the clearance between the— [170] A. Between the—

Q. —the bearing and the strong back? A. That is correct.

* * * * *

Q. Do you know what classification society the HELLENIC SAILOR was classified with in 1967? A. She was always with Lloyds Register of Shipping, which they classify only Class A vessels. They accept, rather only Class A vessels. A-1.

* * * * *

[171] * * * * *

Q. Insofar as the HELLENIC SAILOR's main engine crank shaft was concerned, was there anything outstanding as of

October, November or December of 1967 from a classification standpoint? A. No. We usually try to update all vessels, we try [172] to—

The Court: What is the date of that report?
The Witness: New York, March 24, 1966.

* * * * *

Q. Mr. Petsis, I ask you to turn to the second document and I ask you whether you can identify that. A. This is also Lloyds Register of Shipping report dated Piraeus, 15th of December, 1966, which among other parts main engine No. 2, cylinder, pistons, rods, valves and gears.

Q. Now, Mr. Petsis, referring to Plaintiff's Exhibit 22 marked for identification, the December 15, 1966 certificate, does that certificate cover the components of the No. 2 cylinder directly above the No. 2 crank? A. Yes.

* * * * *

[176] The Court: Tell me, what was covered, what was—as far as the parts we are looking at in Exhibit 1-A in evidence, what was inspected in connection with the Plaintiff's Exhibit 21 report, the March 24, 1966 report?

The Witness: Would you like me to show through here, your Honor?

The Court: I just want to—yes.

(Plaintiff's Exhibits 21 and 22 received in evidence.)

The Witness: Main bearing No. 2, 3, 4 and 5, which is—this is No. 2 bearing (indicating) up and down—

The Court: Yes, I can see that. Now, what aside from the main bearings?

The Witness: The journals, that means the part of the crank shaft here, 2, 3, 4 and 5. These are the journals.

The Court: All right.

The Witness: Journals and bearings.

Q. Now, with respect to Plaintiff's Exhibit No. 22, Mr. Petsis. A. Main engine No. 2 cylinder, which is this whole assembly. Cylinders, pistons, rods, 1, 2, 3, 4, 5, valves, there are valves around the jacket which it doesn't show here, there are about five valves.

The Court: How about the webs?

The Witness: The webs, it is included usually but [177] they don't mention it because you don't have to remove anything to examine the web. But while he is down in the crank case he does visually see the web. There is nothing on the webs to dismantle anything in order to be examined.

The Court: All right.

* * * * *

Q. Mr. Petsis, the parties have agreed that the [178] HELLENIC SAILOR arrived in New York on October 10, 1967 and berthed at Hellenic's terminal in Brooklyn and that she departed New York on October 21, 1967. Now, did you have occasion between those dates to attend the HELLENIC SAILOR? A. Yes.

Q. Could you tell us the circumstances? A. Well, I went on board and I asked the chief engineer is anything wrong

with the engine, the captain said anything* wrong with the hold.

Q. Did anyone else attend on the vessel at the time of that call? A. Yes. Golten Marine.

Q. How do you spell that? A. G-o-l-t-e-n M-a-r-i-n-e.

Q. Could you tell us who Golten Marine is? A. They are specialized in diesel engines and they have a big workshop, machine shop, in Brooklyn and in various other parts of the world, like Norway, Hong Kong, West Coast, north of the East Coast.

Q. Mr. Petsis, you say they are specialists, they are diesel specialists? A. Yes.

Q. What do they do in their specialty? A. They do all kinds of work on diesel engine, but [179] mainly they have a patent for the crank shaft to grind in place, if it's something wrong with any of the pins.

Q. Do they do bearing work? A. And they also do bearing by spraying, which is the method.

Q. What do they spray? A. They spray white metal. As soon as they take the vessels** in the machine shop, they just bend† the old metal, then thin the shell, and then they spray the white metal following machining according to the diameter of the journals, all the pins.

Q. To do this would they take the bearings out of a vessel and take them to their shop? A. That is correct.

Q. For what purpose did Golten Marine attend on the occasion of that call? A. I have asked him to come and take a wire gauge reading to see the condition of the crank shaft.

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* Should be "engine, and the captain if anything is wrong."

** "bearings" not vessels.

† "burn" not bend.

Q. Was this the first time that you had asked Golten Marine to come and take a wire gauge reading on the vessel? A. No, we often asked Golten Marine.

Q. I didn't hear the answer. A. Very often we ask Golten Marine to take crank shaft wire gauge readings.

[180] Q. Would that be when the vessel is in the Port of New York or otherwise? A. Well, mostly in the Port of New York.

The Court: Did you do it very often on the HELLENIC SAILOR, or just often on your ships in general?

The Witness: We do it generally on all our ships, we do it very often.

The Court: How often did you do it on the HELLENIC SAILOR?

The Witness: I would say sometimes once a year, sometimes twice a year.

The Court: And did Golten—was Golten the company that always did it?

The Witness: Yes, until 1967, if I recall, when we bought some equipment and we qualified—and they were already qualified, our chief engineers, but I think 1966 or '67 we bought the equipment and they are doing it also themselves, the chief engineers.

The Court: Well, wait a minute. Prior to getting your own equipment you had Golten come in and take wire gauge readings on the HELLENIC SAILOR?

The Witness: Correct.

The Court: And did you ever use another company to take wire gauge readings?

[181] The Witness: No.

The Court: How often did Golten take wire gauge readings of the HELLENIC SAILOR crank shaft?

The Witness: Once, or a maximum twice a year.

The Court: Then when was it you got your own equipment?

The Witness: If I remember right, 1967. 1967. And then the chief engineer was doing it.

The Court: Now, did each ship have its own equipment?

The Witness: Yes, sir. But in between also, if I remember right, we are calling Golten to compare.

The Court: But you still would call Golten in?

The Witness: Yes, sir.

• • • • •

Q. Was there any reason why you called Golten on this occasion? A. No. It was a routine inspection—a routine wire gauge reading.

Q. During the course of these wire alignment readings that Golten would perform, would the representative of Golten [182] perform them by himself? A. Yes, sir.

Q. Would any member of the ship's engineering staff also be in attendance? A. Well, usually the chief engineer or the second engineer.

• • • • •

Q. How quickly would Golten Marine report the results of their wire alignment reading to you? A. Within two to three hours through telephone. They call me in the office.

Q. Would they also advise the chief engineers of these while on the vessel? A. Yes, on the spot.

• • • • •

Harry T. Petsis—for Plaintiff—Direct

[183] • • • • •

Q. Mr. Petsis, at the time you received the original of Plaintiff's Exhibit 23 in evidence, what was your opinion of the readings contained therein? A. The readings are satisfactory.

Q. Did the readings indicate to you that work was required on the main bearings, or on the crank shaft? A. No. Then it wouldn't be satisfactory.

Q. Did Golten Marine's representative advise you that work was required on the main bearings or the crank shaft? A. No, they agree with me that in order.

Mr. Kennedy: I object to the hearsay.

The Court: Objection overruled. I will take it as far as just for the fact of what they agreed to, it isn't taken to prove the fact that they were satisfactory.

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[184] • • • • •

The Court: Let's hear the question and answer that was objected to.

The Court: "They agreed with me"—

The Witness: That the bearings are in order.

The Court: All right. I am not going to strike the answer because it is not being received to prove the fact that the bearings were in order, it is being received to show whatever it does show about what Golten told this representative of the shipowner. But I am sure Mr. Kritzalis will probe a little further.

• • • • •

[185] • • • • •

Q. Mr. Petsis, did anyone from Golten Marine tell you anything with respect to Plaintiff's Exhibit 23 in evidence at the time you were first advised of the readings contained therein? A. If I remember right, Mr. Haugestadt, who is the top expert of the wire gauge reading—

The Court: How do you spell that?

The Witness: H-o—

Mr. Kritzalis: It is H-a-u-g-e-s-t-a-d-t.

The Court: All right.

The Witness: And he read me the readings on the phone and I ask his opinion as an expert, do you think then that—of course I was writing them in my desk, and I saw [186] that they are satisfactory. However, I asked Mr. Haugestadt, so we're sure now that we don't need anything to do on the bearings.

The Court: What did you say to Mr. Haugestadt?

The Witness: I told him, are they satisfactory, the results? He said yes. And then I asked him, you are sure? He said yes. Do you have to do any work on the bearings? He said no.

However, for my own knowledge and experience, I could see that the readings were in order.

Q. When was that conversation with Mr. Haugestadt? A. Two, three hours after they are taken. I would say about noon. Usually they come about nine o'clock and they start, and by 11:30 or 12:00 they call me, unless it happens I will be on board the ship, I will get the results on the spot.

Q. Would that be October 11, 1967? A. That is correct.

Q. Mr. Petsis, the parties have agreed that on the morning of October 16, 1967, the HELLENIC SAILOR proceeded to the facilities of the Bethlehem Steel Corporation at Hoboken for drydocking. A. Yes.

Q. What was the purpose of that drydocking? [187] A. The annual inspection. And the drawing of the tail shaft which is due. Every three years the tail shaft should be withdrawn for inspection.

Q. Were you in attendance during the course of that drydocking? A. Yes.

Q. Was any work done on the crank shaft or the main bearings during the course of that drydocking? A. No, sir.

Q. Was any work required to be done on the main engine crank shaft or the main bearings during the course of that drydock? A. I beg your pardon?

Mr. Kritzalis: Would you read back the question to the witness?

(Question read.)

A. No, sir.

* * * * *

[192] * * * * *

The Court: Let's have the record show, so it isn't cryptic, Plaintiff's Exhibit 18-A in evidence is a letter from the captain of the HELLENIC SAILOR dated October 31, 1967 to Hellenic Lines Limited in New Orleans reporting the fact that on October 31 the ship had some degree of a collision with the side or some other part of the industrial canal to the Mississippi River, and Plaintiff's Exhibit 18-B in evidence

is an interoffice memorandum dated November 2, 1967 from Hellenic Lines in New Orleans to Mr. Hennessy of the New York office claims department of Hellenic Lines forwarding the master's October 31 letter. And neither of these documents, I guess, got to Mr. Petsis. Is that right?

The Witness: Right.

* * * * *

[194] * * * * *

The Court: All right. That clears that up.

So all of Defendant's Exhibit 8 is stipulated to.

Mr. Kennedy: Defendant's proposed findings, your Honor.

The Court: I'm sorry, defendant's proposed finding 8.

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[195] * * * * *

Q. What other vessels did you attend between November 14 and November 19, 1967? You may use anything to refresh your recollection. A. November 14, you said?

[196] Q. Starting with November 14. A. I have attended the HELLENIC HALCYON, HELLENIC GLORY, ITALIA, HELLENIC SAILOR.

Q. Where were these vessels when you attended them? A. At our pier, Hellenic Lines' terminal in Brooklyn, foot of 57th Street.

Q. What vessels did you attend the following day, November 15? A. Also HELLENIC HALCYON, HELLENIC GLORY, ITALIA, HELLENIC SAILOR.

Q. What about November 16? A. The same vessels.

Q. The same four you have identified? A. Yes, sir.

Q. What about November 17? A. November 17 I attended HELLENIC HALCYON, HELLENIC SAILOR and ITALIA.

Q. What about November 18?

The Court: Wait a minute. The 17th you attended what?

The Witness: HELLENIC HALCYON, HELLENIC SAILOR and ITALIA.

Q. The following day? A. On the 18th I attended all three vessels—

[197] Q. What three vessels? A. HELLENIC HALCYON, ITALIA, and HELLENIC SAILOR.

* * * * *

Q. Mr. Petsis, between November 14 and November 19, 1967, at the times you were aboard the HELLENIC SAILOR did you have any conversations with either the chief engineer or the captain pertaining to the condition of the main engine, crank shaft and main bearings? A. No.

Q. Did you, on the occasions when you attended on board the HELLENIC SAILOR between November 14 and November 18 have any conversations with the chief engineer or with the captain of the HELLENIC SAILOR with respect to the incident which is reported in Plaintiff's Exhibit 18-A in evidence? A. You mean the touch—if I remember right, that's the touch, touch-off.

Q. That is correct. A. No.

Q. Did the chief engineer request that any work be done to the main engine crank shaft or the main bearings? A. No, sir.

Q. Did you at any time between November 14 and November [198] 18 yourself enter the crank case to inspect

the crank shaft, the main engine crank shaft or the main bearings? A. No. Usually I enter if there is something wrong and I have a report from the chief engineer, then I have to go into the crank case and see.

Q. Did you receive any such report from the chief engineer while the vessel was in New York between November 14 and November 19? A. No, sir.

Q. To your knowledge, did Mr. Allen enter the crank case between November 14 and November 19, 1967? A. I don't think he entered.

Q. To your knowledge did any shoreside contractors board the HELLENIC SAILOR while she was in New York between November 14 and November 19 for the purpose of examining the main engine crank shaft main bearings—or main bearings? A. No, sir.

* * * * *

[199] * * * * *

Q. Mr. Petsis, I ask you whether you, between November 14, and November 19, 1967, saw that document (handing). A. No, I didn't. I did not.

The Court: You never saw Plaintiff's Exhibit 25 marked for identification?

The Witness: No, sir.

The Court: What is Plaintiff's Exhibit 25 marked for identification?

Mr. Kritzalis: Those are, your Honor—well, I don't want to characterize them because my opponents—they were contained in my opponent's proposed findings, so that I am prepared to stipulate as to what it is but—

Mr. Kennedy: These are the readings that the chief sent back from Greece after his deposition. He reported that these readings were taken at Philadelphia.

The Court: This is what there is some question about and you want to examine about?

Mr. Kennedy: Yes.

The Court: All right. Can I see the document?

[200] Mr. Kritzalis: Yes, sir (handing).

It would be the first of the two sheets.

The Court : In other words, Plaintiff's Exhibit 25 marked for identification is what Hellenic Lines claims was a chart of alignment readings taken at Philadelphia November 13, 1967; is that right?

Mr. Kritzalis: Yes, sir.

* * * * *

Q. Mr. Petsis, did you personally have anything to do with the events pertaining to the HELLENIC SAILOR subsequent to the fracture of the crank shaft on December 24, 1967? A. No, sir.

* * * * *

Q. '56, I'm sorry. During the course of your service with Hellenic Lines, to your knowledge has any other crank shaft broken on a vessel either owned or operated by Hellenic Lines? A. No, sir.

* * * * *

[201] * * * * *

Cross Examination by Mr. Kennedy:

Q. Mr. Petsis, you testified concerning certain movements in main bearings as the shaft rotates; is that correct? A. Yes, sir.

Q. And you have said that the shaft is designed so that there will be a certain amount of movement; is that correct? A. The shaft has excess flexibility, those kinds of engines, the Doxford engines.

Q. Because of their size? A. Due to their size, yes.

Q. As the shaft is rotating and the bearings are moving, is there any flexing in the webs of the shaft? A. Well, not the web, but there might be a vibration on the webs. Not flexibility on the webs itself because the web as we stated before, it is big, very big and very thick.

Q. It is your testimony, then, that there is no flexibility on the webs, crank shaft webs? [202] A. Well, the entire crank shaft has flexability, but particularly the webs, no.

Q. What I am getting at is, are the main webs flexing as the shaft rotates? A. No, it doesn't flex, no.

Q. If you have the crank shaft in a sag alignment, would you not have flexing of the webs as the crank shaft rotated? A. The web itself will be—in other words, it depends the position that the web will have, whether the vessel is loaded or is unloaded, you see, but there is no flexibility in the web itself.

Q. But the web itself doesn't flex at all; that is your testimony? A. Well, actually it changes position, I would say, let's put it this way. It changes position, the web. In other words, maybe if I clear up myself, it might change the clearance between here and here (indicating), the distance, or here and there.

Q. As it rotates, that is? A. As it rotates.

Q. As the shaft rotates? A. Yes.

Q. Isn't that referred to as flexibility in the— A. Well, you can call that flexibility, probably.

[203] Mr. Kritzalis: I object to that, your Honor, on the grounds the witness has testified that that is deflection and that is how deflection is—

The Court: I don't think that is what you mean, but let's make sure I know what and the witness knows what you mean. You are asking if the web itself would have flexibility?

Mr. Kennedy: Would flex, that is correct.

The Court : And what do you mean by flex? You mean sort of curve?

Mr. Kennedy: The webs are designed—well, just looking at the diagram you see the webs are parallel.

The Court: Yes.

Mr. Kennedy: Both bottom and top, they are both parallel, as the shaft rotates, my question is, is there any flexing in the webs, do they move at all.

The Court: Wait. I just want to make sure I understand it. Are you asking whether the—within the web it kind of bends; you are not asking that, are you?

Mr. Kennedy: Well, I am asking whether—we have a journal, the journal pin is at the top here, and we have a web running here and running there. As the shaft rotates, I am asking if there is any movement at all of any kind in the shaft.

The Court: And the kind of movement you are [204] describing is not a bending of the web, but the whole web—

Mr. Kennedy: A flex in the web.

The Court: —having a kind of wobble?

Mr. Kennedy: Yes.
The Court: All right.

A. If you call that the deflection, yes, they change in the four position. The top center, the top bottom, port and starboard.

Q. Does the amount of sag or hog in a crank shaft have anything to do with the amount of deflection in the main crank web? A. Well, partly they have to do, yes.

Q. Can you correlate the sag in a crank shaft with the deflection in a web? A. Well, let's put it this way, from the statistics that I know of these engines, there is a brand new engine that I know that from the manufacturer that the deflection was 150 thousandths of an inch, therefore on those big, Sun Doxford engines, we don't take into consideration any deflection. A brand new engine to have 150 thousands of an inch, it is competitive and is accepted by the manufacturers and by all classifications, Class A, for example, which is Lloyds Register of Shipping, and American Bureau of Shipping.

Q. You said 150 thousands of an inch? A. Well, that's the statistic, yes, that I read from— [205] I mean I had from the manufacturer. That it can reach as high as that, and now I am talking of a new Sun Doxford.

Q. Did the manufacturer tell you that this was a desirable deflection? A. Well, it is not a desirable deflection but it is common for those big webs and it actually didn't happen anything.

Q. Did the manufacturer tell you that it was an allowable deflection? A. Well, it is not allowable, but that's the

deflection that the design of the engine had at that time. And they let it go.

The Court: Well, you've just got to—there are several things. Number one, the term "sag" which you are using now and which is in the stipulations to some extent, that hasn't been defined, and I think I had better learn what sag is and what hog is with reference to these drawings.

* * * * *

[206] * * * * *

Q. Mr. Petsis, would you tell us what a sag in a crank shaft is? A. Well, usually you find sag of the wire gauge reading when the vessel is either in ballast or partly loaded.

The Court: What is sag? What is it?

The Witness: In other words, sag is actually when it shows halfway towards up. I don't really—

The Court: Is it where the parts of the crank shaft go down from—

[207] The Witness: In other words, if it is a sag, this line (indicating), it is going to be like there (indicating).

The Court: In other words, some of the—

The Witness: The fact that the engine is in the center, your Honor, and when there is very little cargo, or in ballast, you always find the string here is halfway like this, that's what they call sag. And then when the vessel is loaded, or loaded partly, you find it hard*—

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* Should be "hog."

Mr. Kritzalis: That would be the shaft, your Honor, that we are talking about.

The Court: Please, Mr. Petsis. I assume that in theory at least you could have a perfect alignment of the crank shaft; is that right?

The Witness: Well, in Doxford engines it is hard to say.

The Court: All right, I am just trying to—

The Witness: Theoretically, yes.

The Court: And everything is exactly straight up and down, and these parts, the journals, are all lined up and the lines are exactly horizontal and all that. Now, is there a situation where, let's say that the No. 3 journal is a little lower than the No. 1. That is sag, I assume.

The Witness: Yes, if it is lower it is sag.

The Court: And if the No. 3 journal were a little [208] higher than No. 1, that would be hog; is that right?

The Witness: Well, not necessarily, because it might fluctuate between the one and the other. It might be a 20 thousandth of an inch difference between No. 2 and No. 3 for example, or No. 3 and 4; 20, 30, 40 thousandths of an inch might go up and down like this. But generally speaking, if it is—when it is hog, all the way like this, halfway like this, starting from zero, that's when the vessel has very little cargo or is in ballast and the opposite of that, when it is hog it's when it's loaded. Then you find it like there.

Then theoretically and practically, it is straight when the vessel is lying on a drydock.

The Court: All right.

Mr. Kennedy: Your Honor, I think I may be of help here.

Q. Mr. Petsis, referring to Plaintiff's Exhibit 23 we show a Golten wire alignment reading; is that correct? A. Correct, yes.

Q. Now, is it true that at the No. 5 position, which is the No. 5 bearing area, you find zero? A. Yes.

Q. And also at the No. 1 you find zero? A. Right.

[209] Q. And this is the theoretical zero; isn't that correct? A. It is, yes.

Q. Now, referring to the line that comes below the straight line going through the center of the exhibit, if I were to push this line up so that it would lie on the same line, the straight line, in what position, or what condition would the shaft be? A. You mean to be here on the straight line?

Q. Yes. A. Right here?

Q. That's right, yes. A. Well, it wouldn't happen.

Q. Well, theoretically if I did— A. Theoretically it would be—

Q. Wouldn't I have a perfectly aligned shaft? A. Yes.

Q. Straight as possible? A. But that could never happen with Doxford engines.

Q. I understand that, there is some flexibility. A. Especially Sun Doxford.

Q. Now, is it fair to say that the—that if the crank shaft of the Sun Doxford in question is as it is shown on

the diagram, that the shaft is in a sagged position? A. Yes.

[210] Q. Now, I will turn the diagram upside down just for purposes of illustration. The line moves over the center line, the curved line moves over the center line. Is it fair to say that it is now in a hog position? A. Correct, yes.

Q. At No. 4 there is a figure 32 thousandths of an inch. What does this figure mean? A. Well, it shows the difference between—from zero, let's say—it is a hog 32 thousandths of an inch.

Q. A hog or a sag? A. It is a sag 32 thousandths of an inch.

Q. So the crank shaft at position No. 4, the main bearing No. 4, has a sag of 32 thousandths of an inch? A. Yes.

Q. What about the figure at No. 3? A. Number 3 is 40 thousandths of an inch.

Q. 42 thousandths? A. 42 thousandths, yes, I'm sorry.

Q. And what about at No. 2? A. Number 2 is 32 also.

Q. You testified concerning the circumstances under which one might expect a sag in a vessel. A. Sag, yes.

Q. Under what circumstances would you expect a sag? [211] A. Partly loaded. Ballast.

Q. You mean relatively light? A. Yes.

Q. Now, the figures on the exhibit which read 12 feet 6 forward and 22 feet 10 after indicate the load condition of the HELLENIC SAILOR? A. Indicates the draft forward and aft, yes, the load condition.

Q. Is she relatively light? A. She is, yes.

Harry T. Petsis—for Plaintiff—Cross

Q. Is it desirable when loading up the ship, that is, bringing her to her maximum draft, to have the sag in the shaft, or to have the crank shaft move with respect to alignment? A. When it is fully loaded, you are going to have—

Q. A hog? A. A hog, yes.

The Court: I am not hearing you. When the vesesl is fully loaded, you should have a hog?

The Witness: Hog, yes, sir.

Q. Mr. Petsis, I was questioning you a short time ago about deflection in a crank web, and you referred to the figure of 150 thousandths of an inch. A. Well, yes, that's what I had from the manufacturer. [212] That's a statistic. It happens that they have built an engine and the deflection right from the trial it shows 125 to 150, and the manufacturers are good and worried, that's what they told me, it is for those types of webs and size of engine, it's logical—not logical, actually you can expect such a big deflection. That's why they do not—they do consider the most serious instrument and the best for those types of engines as the wire gauge reading, the ones that Golten is using.

Q. Did the manufacturer of the Hellenic Sailor Sun Doxford engine ever advise you as to the permissible or the allowable deflection in the crank shaft's main crank webs? A. No, sir.

Q. Do you know from your experience what the maximum allowable deflection in the—

The Court: Look, as far as I know, there are no recorded measurements of deflection here.

The Witness: Correct.

The Court: So how am I going to evaluate any testimony at all about allowable deflection or anything like that? What we've got is what I understand to be a different kind of a measurement. That is the wire gauge reading and that is not deflection. Am I right?

Mr. Kennedy: That's right.

[213] The Court: All right. So why do we bother with deflection?

The Witness: Wire gauge reading I think—

Q. Is a wire gauge reading a substitute for taking deflection readings in a crank web? A. Yes.

Q. It gives you the same information? A. Well, I would say yes. But in some cases you have to take also the other readings. But not necessarily. But these are the most accurate and the most successful with those type of engines.

Q. Referring to Plaintiff's Exhibit 23, that is the Golten diagram, is there any information in this diagram which would tell you or tell me the deflection in the main crank webs in the vessel? A. No.

Mr. Kritzalis: Objection, your Honor. I submit—

The Court: Sustained. I don't see any point in going into the deflection. There is nothing to measure it by.

Mr. Kennedy: Your Honor, if alignment is done to determine the deflection, or as a substitute for the deflection—

The Witness: It is.

Mr. Kennedy: It is?

[214] The Witness: Yes.

Mr. Kennedy: Then it seems to me that an alignment reading should give you some idea of the crank web deflections.

The Court: Can you tell deflection from Exhibit 23?

The Witness: No, sir.

The Court: All right. I guess that ends that.

• • • • •

Q. Are all Hellenic's vessels classed with Lloyds? A. No, sir. We have A.B.S. Most of them are A.B.S., American Bureau of Shipping, which also is Class A-1. 90 percent of them, they are A.B.S.

Q. To your knowledge are these vessels always maintained in class, the Lloyds and A.B.S.? A. Yes; we never lose the classification from any ships.

• • • • •

[216] • • • • •

Q. You testified concerning differences between Sun Doxford and British Doxford engines. A. Yes.

Q. Is it your testimony that from an operational point of view they are the same? A. The design, principal design, is the same. Except that all bearings are spherical on the Doxford engine while on the Sun Doxford only the main bearings are spherical. And [217] of course these are bigger in diameter and they are much heavier engines than the one built in England.

These are the basic differences.

Harry T. Petsis—for Plaintiff—Cross

Q. Why does the British Doxford have all spherical bearings while the Sun Doxford only has spherical main bearings? A. Well, the manufacturer, presumably the manufacturer figures that they might have better results with all spherical.

Q. If you have spherical bearings does this allow for more play or greater play in the crank shaft? A. I would say yes.

* * * * *

[219] * * * * *

Q. When taking wire alignment readings on a Sun Doxford vessel, must you take into account the difference between the forward draft and the aft draft? A. Yes, we always take the draft, the forward and aft.

Q. Does the difference in the trim, that is, between the forward and the aft draft, affect the reading that one is likely to get in taking a wire alignment reading? A. Very, very little. Insignificant. Very little.

Q. Well, is it better to take a wire alignment reading with the ship on an even keel? A. Well, it is better, but then on even keel you have to put it in drydock or it has to be completely—I mean it is a very small difference. You cannot take into consideration those things. Generally speaking, of course, you will find a small difference.

Q. You said you concluded that the Golten Marine readings that were reported to you shortly after they were taken in October of 1967 were acceptable; is that the word [220] you used? Or you may have used some other— A. Yes, acceptable. Yes. And satisfactory, I would say.

Q. Are there maximum allowable hogs, or sags permissible for a Sun Doxford crank shaft? A. None.

Q. There are none? Well, how do you determine whether the sag is too great? A. Well, we are using some points, our company, or the people, I mean, for example maybe we take some advice from Golten or from our past experience and all, we're using some figures which I would say between 40 differential thousandths up to 60 or 80 thousandths it is allowable; if we see it is 80, a maximum 80, then we start worrying and we start taking immediately the main bearings and bring it to—up higher. In other words, the maximum that we do accept, it is I would say between 60 and 80 thousandths of an inch.

Q. Have you ever seen a reading taken from the HELLENIC SAILOR Doxford which showed that the shaft was either sagged or hogged to the extent of 80 thousandths of an inch? A. Well, we didn't reach that high, but in the past I have seen almost there. This was a few years ago. That we immediately did the rebabitting of the main bearing.

The Court: Would you read that answer, please? [221] (Answer read.)

The Witness: And bring it back to standard.

Q. Are you referring now to the HELLENIC SAILOR particularly? A. Well, that's the vessel you asked me. Or generally all other Doxford engines we handle the same way.

Q. All other Doxfords? A. That we have we treat in the same way.

Q. And they are the two British and the two Sun Doxfords that you have? A. Correct, sir.

Harry T. Petsis—for Plaintiff—Cross

Q. So that is it your testimony that as one goes along one learns about the particular engine and gets to know when maybe the sag is getting a little too great or the hog is a little too great, then one makes a change? A. Correct.

Q. Does the manufacturer prescribe any maximum sags or hogs? A. No.

Q. It does not? A. No, but I am sure if we ask the manufacturers they are going to tell us they wouldn't worry even if it is 125 thousandths.

* * * * *

[223] * * * * *

Q. You said that you never saw Exhibits 18-A and 18-B, that is, the interoffice memo from your New Orleans office and the captain's letter. A. That is correct, sir.

Q. If you had seen them prior to the time the vessel broke ground from New York in November of 1967, would you have taken any particular action with respect to the vessel? A. No, but I would have asked the master and the chief engineer if they have any excess vibration in the area of the stern area where the propeller is, if they have sounded their bilges, their double bottoms and if there was any leak of water, and furthermore, if the main engine shows any abnormalties and excess vibration or anything.

Q. Would you have been concerned at all with whether the alignment of the crank shaft might have been adversely affected as a result of the incident? A. No, because the way they described it, it was touch, touch and go. It is on a soft muddy section, so I wouldn't worry about the main engine at all.

Harry T. Petsis—for Plaintiff—Cross

Q. You were asked if Mr. Allen entered the crank case of the HELLENIC SAILOR's main engine in November of 1967 while the [224] vessel was in New York, and I believe you answered that to your knowledge he did not. A. Yes, because if he entered it, he might enter it just if there is some cleaning or something, but if it is scientific damage or something, he would have told me that "I went to the engine to see such and such part," and I do likewise—

Q. To your knowledge, was Mr. Allen on board the HELLENIC SAILOR while she was at New York in November of 1967? A. That, I don't know.

Q. You don't know? A. I mean I would say that—

Q. You don't know? A. Well, more or less—

Mr. Kritzalis: Can the witness answer the question, your Honor?

Mr. Kennedy: He said he doesn't know, then he keeps saying "more or less."

A. Well, I would say that—I have to see his diary. You see, the way I have my diary, he has the same diary.

Q. So that is your answer, that you have no personal knowledge of his being on board? You don't know whether he was on board or not; isn't that your answer? A. Well, the answer will be that I don't know, yes. But if he had been into the engine he would have told me, and [225] he noticed something—

Mr. Kennedy: I move to strike.

The Court: Motion denied.

Q. You testified concerning the internal inspection of an engine. I take it this is all engines, all diesel engines, or

was it limited to Sun Doxford engines? A. No, I would say that all inspections that the chief engineer should do, it is almost the same with all types of diesel engines.

• • • • •

[227] Q. You said that in 1967 the chief engineer received certain equipment on the HELLENIC SAILOR which would enable him to take his own wire alignment readings? A. Yes, sir.

Q. Did he make any records of such readings, written records of such readings? A. Well, as far as I know, the chief engineer, if they find something wrong they do make records.

The Court: Mr. Petsis, you will speed this up if you will listen to Mr. Kennedy's questions and answer those questions and none other. He has asked you simply if they made any records of shipboard wire alignment readings, or whatever you call them.

The Witness: Yes, wire gauge readings.

The Court: And it is either yes or no or you don't [228] know.

A. Well, they are making some records, yes.

Q. Have you ever seen these records? A. Well, I don't —some of them I have seen, yes.

Q. Where, in Hellenic's New York office?

Mr. Kritzalis: Your Honor, are we talking about the HELLENIC SAILOR or are we talking about the other—

Mr. Kennedy: We are talking about the HELLENIC SAILOR.

Harry T. Petsis—for Plaintiff—Redirect

A. On board the ship I have seen some.

Q. On board the ship? A. Yes, and some in our office, of course.

* * * * *

[229] * * * * *

Redirect Examination by Mr. Kritzalis:

Q. Mr. Petsis, I believe in response to questioning both on direct and on cross you stated that the readings shown on Plaintiff's Exhibit 23 were, in your words, satisfactory, or acceptable? A. Yes, sir.

Q. Now, I believe in response to one of Mr. Kennedy's questions I heard the figure 125 thousandths of an inch. A. Well, the figure 125 thousandths—

> The Court: Now, look, that is not any question. 125 thousandths of an inch, he was talking about that with respect to deflection.
>
> Mr. Kritzalis: Your Honor, I believe the witness was talking about 150 thousandths of an inch with respect to accepted deflection, and I believe when he was asked the same question with respect to maximum permissible alignment [230] according to the manufacturers, the witness said 125 thousandths of an inch. I believe the record will show that. If it doesn't, I stand—
>
> The Court: I think you are wrong. But maybe I'm wrong.
>
> All right, let's clear it up.

Harry T. Petsis—for Plaintiff—Redirect

Q. Was I correct in restating your testimony on cross-examination? A. Well, it is not a rule from the manufacturers, but I heard about that. I heard that some new engines they have deflection as high as 150 thousandths, and also wire gauge reading as high as 125 thousandths of an inch.

Q. Would that be either hog or sag? A. Hog or sag, yes. And they were not worrying about it.

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[232] * * * * *

Mr. Kritzalis: Your Honor, the parties have stipulated to plaintiff's proposed finding of fact in Case 71 Civil 3221.

The Court: All right.

Mr. Kritzalis: Number 4, in its entirety.

The Court: All right.

[233] Mr. Kritzalis: And plaintiff's proposed finding in the same case numbered 5, to read, "In consideration of cargos undertaking and of defendant's written guarantee, Hellenic delivered the shipment at Bombay."

* * * * *

[245] * * * * *

The Court: That's right. Now, another thing, I should be more patient than I am, but I am very interested in the effect of Mr. Allen's letter of November 6. Now, sticking [246] right with subdivision 1, there is no doubt that Hellenic Lines has the burden of showing due diligence. If the chief engineering official of this company, upon

seeing the October 11 readings, was concerned and recommending remedial measures and no such measures were taken, how does Hellenic Lines satisfy a burden of proof of due diligence? Burden of proof is crucial here. You have got it.

Mr. Kritzalis: That's right.

The Court: I read the letter quickly. I think that the characterization of the letter, I don't know how it should be characterized at this moment. I didn't look at it exhaustively. But to me that may be almost the guts of the case. And I would just be glad to get to it as fast as we can.

* * * * *

[252] * * * * *

The Court: So the real question is the significance of these readings, whether they show an abnormality that required further inspection and remedying; isn't that the question? And that really affects all of the cargo in the case, does it not?

Mr. Kritzalis: I would say that the answer to that question is yes.

The Court: All right. Now, how can we get—the [253] letter is not as menacing as Mr. Kennedy's proposed findi[illegible], I don't think.

Mr. Kritzalis: I submit it is not menacing at all if read both on its face and in conjunction with the man's testimony. In other words, taking it—well, I am reluctant to argue a motion before your Honor, but the inference that we have to draw, that we would ask your Honor to draw, when coupled with Allen's own words in his deposition,

concededly on cross-examination, not on direct examination, would be that had Allen himself, who was a man who worked for Hellenic Lines for some 20 years, felt that alignment readings had to be taken, he would have said we have to take them and we have to take them at New York before the vessel sails to Jedda in November—on November 19, 1967.

* * * * *

[254] * * * * *

MARCOS EVANGELOU, called as a witness by the Plaintiff, was duly sworn through the interpreter and testified as follows:

Direct Examination by Mr. Kritzalis:

Mr. Kritzalis: Your Honor, may we seat the interpreter, too?

The Court: Just so you hear. Speak loudly.

The Interpreter: Yes, I will, sir.

Q. Mr. Evangelou, by whom are you presently employed? A. Hellenic Lines.

Q. How long have you been employed by Hellenic Lines? A. Since 1956.

Q. Were you the chief engineer of the HELLENIC SAILOR during the voyage at issue in this litigation? A. Yes.

Q. What is your present position with Hellenic Lines? A. Chief port engineer at the Port of Piraeus.

Q. How long have you been in that position? A. Since February 5, 1971.

[255] * * * * *

Q. Prior to becoming port superintendent, or superintendent engineer in Piraeus, what did you do for Hellenic Lines? A. Since 1956, apprentice engineer, third engineer, second engineer, and chief engineer until the time I became port engineer.

* * * * *

[258] * * * * *

Q. Mr. Evangelou, the parties have agreed that the HELLENIC SAILOR arrived at Savannah, Georgia on October 5, 1967. From where did the HELLENIC SAILOR come? A. From Durban.

Q. Prior to departing from Durban for Savannah, did you have occasion to make any inspection of the main engine, or main engine crank shaft or the main bearings? A. Yes, I conducted an internal inspection at Durban which shows in the logbook.

Q. Could you briefly describe for us how this internal inspection was performed and what it consisted of? A. Such an internal inspection is conducted, to begin with, at all times whenever the vessel is projected to travel on a voyage of four to five days. The type of inspection, the inspection is conducted as follows: In view of the fact that the vessel is at sea, and since it is possible that the wave action would cause the propeller to turn, we use a turning gear. Its purpose is to keep the engine turning very slowly, or even to keep it stopped so that the wave action will not cause any sudden turn.

Q. Is this while the vessel is lying in a dock? [259] A. To be sure, as long as it is at sea, or, as it is in the water, it is possible for another vessel to pass alongside

of us and cause the propeller to turn by its wave action.

Q. Fine. Please proceed.

The Court: I am not clear what the purpose of the turning gear is.

The Witness: If we do not make use of the turning gear, which as we said is a safety device, and if I were, for example, to enter the engine—the crank case and another vessel were to pass near us and by its wave action cause our propeller to turn, and which propeller by means of the terminal shaft and end shaft and intermediate shaft is connected to the crank shaft of the engine, the engine will turn and it would kill me. We open the covers of the engine, the inspection covers of the engine, and we enter the engine itself. I, with an assistant of mine. The tools that I use is a flashlight, a hammer and a feeler gauge.

Q. Is that such as what I am holding in my hand? A. Yes.

Making use of the hammer I check every single bolt and nut within the engine. If a given bolt controls something and it is tightened with the nut, and I would for example strike that nut with the hammer, as an engineer I can understand whether it is broken, whether it is loose or whether [260] it is properly tightened. After that, making use of the flashlight I check all surfaces. In the event I might find any kind of a crack. Also using the flashlight I check all bearings, the white metal in the event that they have become loose—in case they have flakes, and after that,

using the feeler gauge I take readings to determine if the tolerances—the clearances are the proper ones.

Q. What clearances are those, Chief? A. The clearances with respect to the vessel we are talking about are the clearances that are given, that are necessary for the oil to circulate and the additional clearances that are necessary for the main bearings which are known as spherical clearances.

Q. If these clearances were too great and your examination determined this, what conclusion would you draw from that examination? A. If the clearances were too great, to begin with that would signify that I had an overheating in the circulation oil, lubricating oil, and it would also mean that the alignment of the engine was no longer proper.

Q. You mean the alignment of the engine or the alignment of the main engine crank shaft? A. If these clearances were very great in the bearings of the crank shaft, then of course in the—it would be in the [261] crank shaft. But the engine also has other bearings and it is possible that I may have run into an irregularity in one of those.

* * * * *

Q. If the main engine crank shaft were hogged, would your examination with the feeler gauge show this? A. No.

Q. If the main engine crank shaft were sagged, would your examination with the feeler gauge show this? A. Do you mean that if the crank shaft had a sag and I used the feeler, would I see it then? Is that what you mean?

Q. Yes. A. No.

Q. Are there any other factors involved in your internal inspection of the main engine of the ship we are talking

about in general terms? A. If there are any other factors?

Q. Are there any other steps during the course of such examination? A. As long as I measure my clearances, as long as I check all bolts that exist inside, up and down the engine, and also as long as I check the surfaces for any possible cracks, for me, such an inspection is at an end. That is [262] the inspection that I conduct.

Q. Roughly how long does it take, or would it take on the HELLENIC SAILOR, to perform such an inspection? A. When I conducted an inspection it took me four to five hours.

* * * * *

Q. Did your internal inspection of the main engine at Durban reveal anything abnormal about the main engine crank shaft or the bearings? A. No.

Q. Or the bolts? A. No.

Q. During the course of the voyage from Durban to Savannah, was the vessel's main engine operating normally? A. Yes.

* * * * *

[263] * * * * *

Q. When did you next perform an internal inspection of the main engine of the HELLENIC SAILOR? A. At Savannah.

* * * * *

Q. Was the inspection you performed at Savannah the [264] same inspection, the same kind of inspection that you performed at Durban? A. Yes. Again making use of the turning gear.

Q. Did that internal inspection of the main engine reveal anything to you with respect to the main engine crank

shaft, the main bearings, journals, et cetera? A. No. Everything was in order.

* * * * *

Q. The judge has just told you that the parties have agreed that the vessel went from Savannah to Charleston and Charleston to New York. A. That is right.

Q. At any time during that period while the vessel was at sea did any problem arise with respect to the operation of the main engine? A. What period are you referring to?

Q. I am talking about the run from Savannah to Charleston and the run from Charleston to New York. A. No irregularity.

* * * * *

[265] * * * * *

Q. Were you aboard the vessel on the occasion of her call at New York between October 10 and 21, 1967? A. Yes.

Q. Were you present when a representative of Golten Marine, Inc. boarded the vessel for the purpose of taking wire alignment readings? A. Yes.

Q. Were you physically present at the time that that representative was to get readings? A. I was in the engine room.

Q. In the crank case? A. Yes.

Q. Were you assisting in any way? A. Of course.

Q. Were you advised—

The Court: What did you say? Yes.

The Interpreter: "Of course."

[266] The Court: All right.

Q. Were you advised of the readings once they were taken? A. We calculated them together once we got out of the engine crank case.

* * * * *

[267] * * * * *

Q. Were you advised of them immediately after the time they were taken? A. The Golten people?

Q. Yes. A. Yes.

Q. Was this before the actual issuance of the written readings? A. The reading that was sent to the vessel by Golten through the office?

Q. Correct. A. Yes, as soon as we got out of the engine we made the calculations on a rough piece of paper, I look at them and then they go away.

* * * * *

Q. What did you conclude from those readings? A. That those readings were very reasonable.

Q. During the course of the vessel's call at New York on that occasion, namely, between October 10 and October 21, did you have occasion to perform any internal inspection of [268] the main engine? A. Yes. Whenever we make wire—we take wire readings, we do conduct an internal inspection.

Q. Do you recall when that inspection took place? A. I do not remember. If I may consult my log.

Mr. Kritzalis: May I, your Honor?

The Court: Yes, he may refresh his memory with those.

A. On October 11, 1967.

Q. Can I assume that the internal inspection of the main engine you performed on that occasion was similar in all respects to the one performed at Savannah and the one performed at Durban? A. In a diesel vessel this is a routine operation.

Q. Did that inspection, internal inspection at New York, reveal anything to you with respect to the main engine crank shaft, main bearings, journals, bed bolts? A. No irregularity. Everything was in order.

Q. Did you have any reason while the vessel was at New York on the occasion of that call to request the office engineers to send anyone on board the ship, such as representatives of Golten Marine, for the purpose of removing the main bearings?

Mr. Kennedy: I object as leading, your Honor.

The Court: I don't think it is leading but I [269] think it is obvious. You are asking if he had anybody come aboard to remove the main bearings?

Mr. Kritzalis: I have some other questions—

The Court: That is your question now?

Mr. Kritzalis: Yes.

The Court: I would assume that the engine wasn't taken apart unless shown otherwise.

Mr. Kritzalis: I would like to get down to the next question, which is "Why not?"

Could I have the question read to the witness?

A. There was no reason.

Q. If there were any reason to correct the alignment of the main engine crankshaft, how would that correction have been done? A. Such a correction is accomplished by re-

moving the lower halves of the main bearings, and by then removing the remaining existing surface metal and resurfacing them with metal, using new clean metal, and it may be necessary for us to polish the crank pins and journals.

The Court: May I have the whole answer read again?

(Answer read.)

Q. The removal of the old metal and the replacement with new metal would be which metal? A. White metal.

[270] Q. Would that operation be performed on board the vessel? A. No, the bearings would have to be taken to a plant.

Q. During the course of your service with your—your shipboard service with Hellenic Lines, when Hellenic vessels found themselves in New York and found themselves in need of such work, to what plant would the bearings be sent? A. Usually to the Golten Marine.

* * * * *

Q. Would there be any way of correcting the alignment of the crank shaft other than physically removing the main bearings from their position in the entablature and sending them ashore to the plant of Golten? A. I understood the question now, but the answer is no.

[271] Q. Did the readings which were determined on October 11 indicate to you that such a course of action was called for?

The Court: You don't have to—you've got a little piece of wood, you don't have to have ten nails

through it to hammer it down. I get the point eventually. Maybe not eventually even.

Now, obviously his testimony is he didn't find anything wrong and he didn't take the place apart.

Mr. Kritzalis: Could I just have the witness' last answer to the question? What was the answer?

The Interpreter: He didn't get it yet.

The Court: Just go on. Let's get to another question.

Mr. Kritzalis: If I may, your Honor, since the question is already on the record, I will drop that line of questioning if I can get an answer to that one question.

The Court: All right. Read the question.

(Question read.)

A. Since I said earlier also they were quite satisfactory, why should we do such work?

The Court: I would have been very surprised if he had answered yes.

Q. Mr. Evangelou, the parties have agreed that the vessel left New York on October 21, 1967 and proceeded to [272] Philadelphia and New Orleans. A. Yes.

Q. How was the main engine operating during those two legs, or runs? A. Most regularly.

Q. The parties have agreed, Mr. Evangelou, that a cargo of bulk soybean oil was loaded on the vessel and that loading was completed at 1210 hours on October 29, 1967 and the vessel then shifted to another wharf to discharge cargo and load other cargo. A. Yes.

Q. Were there any problems with respect to the operation of the main engine, crank shaft and other components of the main engine during that shift? A. No.

The Court: When does the logbook show the next internal inspection?

The thing is, Mr. Kritzalis, I would assume that the witness would say that the engine was running regularly at all times during these laps when they were picking up cargo ending with the last port before they leave the United States for the Middle East. Do you have any information to the contrary?

Mr. Kritzalis: Your Honor, I—

[273] The Court: And I don't think we have to go at it leg by leg. I want to—

Mr. Kritzalis: If I may, your Honor—

The Court: This is important, but—

Mr. Kritzalis: I will run through it as quickly as possible, but it seems to me, your Honor, that while I might be prepared to shortcut on almost any other issue in the case, that as to this issue I will try to be as quick as possible and it won't take long, but I will ask your Honor to bear with me.

The Court: Why?

Mr. Kritzalis: It is essentially the heart of the plaintiff's case.

The Court: The heart of the plaintiff's case is not to go through and show a lot of routine inspections. I mean it is important, but it seems to me that it is something that the parties would probably stipulate.

Mr. Kritzalis: Well, they haven't, your Honor.

Mr. Kennedy: Your Honor, I would stipulate to the fact that he will testify concerning inspections that he made and that he will testify also that upon making such inspections the engine was found to be—

The Court: What inspections did he make?

Mr. Kennedy: He—

[274] Mr. Kritzalis: The record of his deposition indicates that he made inspections at Houston and at Philadelphia and again at New York.

The Court: On what dates?

Mr. Kritzalis: Houston would be between November 2 and November 4. Philadelphia would be on November 13, and New York would be sometime while the vessel was there between November 14 and November 18.

The Court: All right. So the record would show, and I am sure this is in the logbook—

Mr. Kritzalis: I would say that that is why I wanted to question the witness on that, your Honor.

The Court: Look, in other words, Hellenic Lines states that there was the kind of internal inspection testified to previously in Houston sometime around November 2 to 4, Philadelphia November 13, New York sometime between November 14 and November 18, and that the witness would testify that there was no irregularities found. Is that right?

Mr. Kennedy: He will testify that he took such inspections and he will testify also that there were no irregularities found.

The Court: All right, that is stipulated. And I have heard his testimony as to the description, I have seen the man, I don't need to have a repetition of that.

[275] Now, from your information, was there any irregularity in the running of the engine?

Mr. Kritzalis: None whatsoever, your Honor. I would say this, that the Plaintiff's Exhibit 15 marked for identification does not include the inspections at Houston and at New York, which is why I don't want to be found having prejudiced my client's position by not having asked the witness on the record here before your Honor whether those were performed. He testified to that on deposition testimony which has been sworn to, but I don't want to find myself one month from now not having asked the question on which one month from now the case may—

The Court: Well, you claim that—would you impeach the witness with the logbook?

Mr. Kennedy: The reason I would stipulate as to his testimony, your Honor, is that since the entries do not appear in the logbook I would like the opportunity on cross-examination or in other cross-examination, to test his credibility. I am willing to stipulate that he will testify as to inspections.

The Court: Well, let's wait for cross-examination. If you are going to cross-examine we can deal with it at that time. We've got a stipulation as to what his testimony would be and that's good enough for me. Now, I assume also he would testify that there

were no irregularities in the running of [276] the main engine, or the crank shaft, at any time from the time we have just heard testimony about, which I guess is New Orleans, through the time the vessel finally left the country for the Middle East.

Mr. Kritzalis: On November 19, 1967.

The Court: All right, on November—

Mr. Kennedy: I will stipulate that that will be his testimony.

The Court: All right. I don't really have to hear it then.

Now, where do we go from here?

Mr. Kritzalis: Could we also have a stipulation that his testimony will be that at those other ports, to wit: Houston, Jacksonville, and Philadelphia, that no member of Hellenic's home office engineering department attended the vessel?

Mr. Kennedy: I will stipulate that that will be his testimony.

The Court: All right.

Mr. Kritzalis: And that no member of the vessel's complement, to wit: the captain or the chief engineer, either from Jacksonville, Houston or Philadelphia, telephoned or otherwise communicated with any member of the engineering staff in Hellenic Lines with respect to any aspect of the operation of [277] the main engine that is relevant in this suit?

The Court: All right.

Mr. Kennedy: The same stipulation as to his testimony, your Honor.

The Court: All right. Well, that shortcuts us some. All right. Now, where do we go from here?

* * * * *

The Court: Mr. Evangelou, what we have been saying here, we have tried to shorten the proceedings and avoid you having to repeat the same thing over and over again. Now, it has been stipulated because we all know that you would testify as to inspections, and in addition to what you have already described, inspections in Houston, Philadelphia and New York, you would testify that those inspections uncovered no irregularities, you would testify that there were no irregularities [278] in running the main engine or the crank shaft at any time before she had left for the Middle East November 19, and you would testify that nobody from the New York office came down to the ship for engine problems in those other ports, and you would testify that nobody called the New York office at those ports about engine room problems.

The Witness: That is also the truth.

The Court: All right.

* * * * *

Q. Mr. Evangelou, at any time following the incident of October 31, 1967, did it occur to you to do either of the following:—

The Court: What is the date?

Mr. Kritzalis: The October 31, 1967 incident. That would be—

The Court: Any time before that, or what? I have just lost your question.

Mr. Kritzalis: I'm sorry. May I have the question read back?

[279] (Question read.)

The Court: All right.

Q. —dye check the main engine crank shaft? Magnaflux the main engine crank shaft? A. No.

Q. Or put the vessel into a drydock? A. No.

Q. Or call Golten Marine's representatives? A. No.

Q. Why not? A. Because in Houston I checked the engine from the time the vessel touched bottom and for four days after that I was checking the double bottom every four hours just in case there was any leak. And in view of the fact that no such indications existed, we normally continued our voyage.

Q. Briefly, what is a dye check, if you know? A. I dye check is a means of determining a leak—a crack.

Q. How is it performed, briefly? A. There are three different liquids. If we have a surface which we wish to check we use the first liquid, which is a kind of tetrachloride which cleans the surface we wish to check. After that we make use of the second liquid, which is red in color, and if I remember correctly it is called [280] penetetrate—

Q. Penetrate? A. Penetrate. And after this red color has dried there is a third type liquid which is milk colored and which we pour over the already red colored surface. If there is a crack, a red line will appear.

Q. How is a magnaflux test performed? A. The magnaflux test has its basis in electromagnetism. At the points

where we wish to check if there is a crack we place various steel shavings and we place two powered cables. If there is a crack, the shavings that are over the surface of the crack rise, whereas the remaining ones that are away from the surface of the crack remain in their prior position horizontally located.

The Court: Can you magnaflux with ship's equipment or do you have to have some outside person come in and do it?

The Witness: This is a sizable electronic type of equipment that one finds in drydocks.

The Court: The ship does not have that equipment?

The Witness: No. Only the dye check.

Q. To do the dye check or the magnaflux of the entire crank shaft, what components would have to be removed in order to expose the surfaces of the entire crank shaft? A. The bed main bearings must be removed—the main [281] bearings must be removed, the central—

The Court: This is obvious. You've got to uncover the metal to make the dye check.

Mr. Kritzalis: Fine.

* * * * *

Q. Mr. Evangelou, the parties have agreed that the HELLENIC SAILOR arrived in Philadelphia from Jacksonville on the morning of November 11, 1967. Did you personally have occasion to perform a wire alignment reading while the vessel was in the Philadelphia area? A. Mr. Allen sent me a letter.

Q. Is this the letter that Mr. Allen sent you (handing)? A. Yes, it is.

Mr. Kritzalis: Your Honor, I offer Plaintiff's Exhibit No. 25 in evidence, and I would like to have marked for identification Mr. Allen's letter.

* * * * *

[282] * * * * *

Q. Mr. Evangelou, Plaintiff's Exhibit No. 25 marked for identification is actually two sheets of paper. The first sheet of paper has been previously marked at a deposition as Defendant's Exhibit 44-A. Is that the alignment reading? A. Yes.

Q. What is the second sheet of paper which has been marked at a deposition as Plaintiff's Exhibit 44-B for identification? A. The second one is a measurement of the thrust bearing of the engine. And the bottom connecting rods.

The Court: What are you offering, both sheets?

Mr. Kritzalis: Well, I would like to offer them both.

* * * * *

[285] * * * * *

Q. I hand you, Mr. Evangelou, Plaintiff's Exhibit 8 marked for identification which is the smooth deck log of the [286] HELLENIC SAILOR (handing), and I ask you to turn to the date on which you have testified you performed the alignment reading and tell me where the vessel was on that day. A. On the 13th of the month of November at 6:00 a.m. the vessel shifted position and went to another, a nearby dock.

The Court: From where to where did the vessel shift position?

The Witness: From the Paulsboro anchorage to a dockside near Paulsboro.

Q. Was it at that dock that you performed your alignment reading? A. At six in the morning the vessel shifted. At 7:15 the engine bell signified finished with engine, that is to say the master told me that the engine is no longer needed, the maneuvering activity is at an end. And from that position the vessel left at 2100 hours at night. In other words, the vessel was alongside the dock for 14 hours. In that period of time I conducted the alignment reading.

Q. Is the fact of the taking of the alignment reading recorded in your engine log? A. Yes.

Q. The entry for what date? A. November 13, 1967, falling on a Monday.

* * * * *

[287] Q. I hand you Plaintiff's Exhibit 26 marked for identification and ask you whether Plaintiff's Exhibit 23 accompanied that letter (handing). A. Yes.

Q. What was your impression at the time that you received Plaintiff's Exhibit 26 marked for identification? A. Simply that the port engineer, Mr. Allen, because of the fact that when in New York we performed the alignment and the draft difference was 10 feet 4 inches, he told me to do an alignment reading when the vessel is in a light condition, that is, empty, as well as when the vessel is fully loaded. Nothing else, except for this difference of some 10 feet which [288] in my opinion has no significance, or very small significance.

* * * * *

Q. Mr. Evangelou, the parties have agreed that the HELLENIC SAILOR arrived in New York from the Philadelphia area on the afternoon of November 14, 1967 and berthed at Hellenic's terminal in Brooklyn. A. Yes.

Q. The parties have also agreed that the vessel departed that dock late on the evening of November 18, proceeded to an anchorage, anchored there for the purpose of securing deck cargo, and sailed from New York at 0520 hours on November 19, 1967.

Now, while the vessel was at New York, either at the dock or at anchor, did you have occasion to perform an internal inspection of the main engine?

The Court: It has already been stipulated that he would so testify.

Mr. Kritzalis: I thought we stipulated up to Philadelphia.

[289] The Court: Including New York.

Mr. Kritzalis: We have included New York?

The Court: It is all taken care of. You don't need to repeat it.

Mr. Kritzalis: All right.

Q. Do you recall whether either Mr. Allen or Mr. Petsis came aboard the HELLENIC SAILOR during her call from November 14 to November 18? A. They were there all that time.

* * * * *

[290] * * * * *

Q. Mr. Evangelou, referring you to Plaintiff's Exhibit 25, what was the condition with respect to alignment of

the main engine crank shaft as shown on that diagram? A. It was a condition of sag.

Q. Is the draft of the vessel shown anywhere on that sheet of paper which contains the alignment reading? A. No, but I can determine it from the bridge logbook.

Q. And you are referring now to what document? Plaintiff's Exhibit 8 marked for identification? A. Yes.

Q. And that would be the smooth deck log for the year 1967? A. Yes.

May I look at it?

Q. Yes, please look at it. A. 25 feet 3 inches forward, 29 feet 1 inch aft.

Q. Is that the draft of the vessel on sailing from Paulsboro for New York? A. One second. Yes.

The Court: What was the draft at the time of the October 11 reading?

A. 12 feet 6 inches forward, 22 feet 10 inches aft.

[291] Q. Does the smooth deck log show what the vessel's draft was when you arrived alongside the dock at Paulsboro having come from the anchorage? A. It shows it, that is when we were at the anchorage in Paulsboro.

Q. What is the draft at the anchorage at Paulsboro? A. 18 feet 3 inches forward, 28 feet 10 inches aft.

The Court: Wait. What were the figures that you just read?

* * * * *

The Court: Well, what significance does that have? He has told me that at the time of the reading reflected in Exhibit 25 the draft was 25 feet 3

inches forward, 29 feet 1 inch aft. Now, is there any —is that correct or is it incorrect?

Mr. Kritzalis: Well, my question to him, your Honor, was whether that draft was the draft on sailing. The drafts recorded in the smooth engine log are the drafts on arrival at a port and the drafts on sailing at a port. So that while we have the draft on arrival at the Port of Philadelphia on November 11, 1967 and while we have the draft on sailing from Paulsboro for New York on November 13, 1967, my question to the witness would be whether the figures that he gave us which were the drafts on sailing were in fact the drafts of the [292] vessel at that time that he took the alignment readings or were they different. If you follow me.

The Court: I follow you. Let's ask the witness.

Mr. Evangelou, the figures of 25 feet 3 inches forward and 29 feet 1 inch aft, that was the draft recorded at what time?

The Witness: 2030 hours at night.

The Court: On the 13th of November?

The Witness: Yes.

The Court: When was the next prior recording of draft.

The Witness: At 0730 hours, that is, at the time the vessel berthed.

The Court: What was that recording, please?

The Witness: On the 11th of November.

The Court: On the 11th of November. Is that right?

The Witness: Yes.

The Court: And what were the readings?

The Witness: The readings were—do you want the figures?

The Court: Yes.

Mr. Kritzalis: No, no. The judge wants the draft reading.

The Court: He is giving it but I just didn't get [293] it down. Just ask him to repeat that.

The Witness: These figures you want. Number one, on—

Mr. Kritzalis: Would you tell the witness that the judge wants the drafts that he has indicated?

And, if I may, your Honor, I believe the witness is under a misapprehension. This was covered in our stipulation with respect to the shifting from Philadelphia on the other side of the river. What the witness is giving you is the draft while the vessel—when the vessel arrived at Philadelphia, she loaded at Philadelphia, she shifted to the other side of the river and what the logbook reflects is the arrival draft on the other side of the river and the departure draft on the New Jersey side of the river, and that is exactly the point that I was raising.

The Court: Well, he said that—

Mr. Kritzalis: The date he gave you was November—

The Court: He said there was a reading 7:30, November 11.

Mr. Kritzalis: That's right.

The Court: All right. Now, what is that reading?

The Witness: 18 feet 3 inches forward, 28 feet 10 inches aft.

Mr. Kritzalis: What date?

[294] The Witness: November 11. At anchorage.

Q. Do you have any drafts shown there for the hour at which the HELLENIC SAILOR fell alongside at the dock at Paulsboro? A. It is the draft that the vessel had when it was at anchorage. Nothing changed for the draft to change.

Q. Without belaboring the matter further, did cargo operations take place between November 11 and the morning of November 13? A. This is what I am checking. Yes.

Q. And was cargo loaded or was cargo discharged? A. It was loaded.

Q. Would not the loading of cargo increase the draft of the vessel? A. To be sure. It is my mistake.

Q. So that is there any draft for the morning of November 13 when the vessel fell alongside the dock at Paulsboro as shown in the logbook? A. No. Only the departure from Paulsboro.

Q. So that when asked the question what the draft was when Plaintiff's Exhibit 25 was taken, were you giving us an approximation? A. Probably so. Rather.

The Interpreter: Rather. I substituted the word [295] "rather" for "probably so."

A. The cargo picked up 808 tons in Paulsboro—the vessel, rather. The vessel, if I remember correctly, every 50 tons of cargo requires an additional inch of draft.

The Court: All right, we had better adjourn.

The Interpreter: "Shall I continue," the witness said.

The Court: It is just not clear to me. And I think if you can—I assume that the draft at the time of the November 13 reading has some significance, so if you could first thing tomorrow just go over again the chronology and what happened—

Mr. Kritzalis: Yes. Your Honor, I am not trying to be obtuse. The simple answer is that we don't have the exact draft at the time they were taken, we have the approximate draft.

The Court: That's all right. But you see, I know you have given it to me but I still, for some reason, don't have a clear picture of what happened in this November 11-November 13, even in rough outline. And whether they were taking—if they were taking on most of the cargo on the 13th then—

Mr. Kritzalis: I think not, and I think it is really of—it is not meant to confuse your Honor. I don't [296] think it is of any significance what was taken at the first stop or the second stop in the Philadelphia area. Simply that with respect to that alignment reading we don't have the exact draft, it is as simple as that.

The Court: But the thing is that last draft is almost a fully loaded condition, the mean fully loaded draft of the ship is 29 feet, according to somebody's figures, and—

Mr. Kritzalis: That is the defendant's proposed finding of fact, and I would have stipulated to it if I knew the answer.

The Court: Yes, but here you've got a mean draft of 27 feet and the earlier figure, the figure at 7:30

November 11 isn't quite that full. It's got a mean draft of about 23 feet, and the problem is that the defendant suggests that when you get the vessel fully loaded or nearly fully loaded you should have a hogged condition. So I think if you could just bring out with your witness the significance of what changes he expected in a nearly loaded ship and whether they met those specifications or didn't meet them, that kind of thing will help me, I would think.

Mr. Kritzalis: Fine.

* * * * *

[308] * * * * *

Q. Mr. Evangelou, we left off yesterday with some question in our minds as to the vessel's draft at the time on November 13, 1967 when you have testified you took the alignment readings contained on that document. A. Yes.

Q. The smooth deck log indicates that at the time of the vessel's departure for New York from Paulsboro the vessel's draft forward was 25 feet 3 inches and the vessel's draft aft was 29 feet one inch. Is that correct? A. Yes.

Q. Now, could you tell us the draft of the vessel as nearly as you can calculate it with any facilities at your disposal here at the time that you took the reading set forth on Plaintiff's Exhibit 25? A. Yes.

Q. What was it? A. The draft when the vessel left Paulsboro was 25 feet 3 inches forward, as we said, and 29 feet 1 inch aft. The vessel berthed there at Paulsboro from eight o'clock, as shown in the logbook, indicating exception for loading, until 2030 hours, indicating completion of loading. In other words, [309] the loading lasted 12 hours and

30 minutes. Again, as the logbook shows, 808 tons were loaded in total. I am supposing that I conducted the alignment check with a wire sometime in the middle of the 12-hour period. In other words, at 2:00 p.m. Let us also suppose that at that halfway point, half the cargo had also been loaded. Therefore, at 2:00 p.m. another 400 tons of cargo were left to be loaded. And because, if I am not tricked by my memory, every 50 tons of cargo the vessel requires a draft of one inch, and if we divide 400 by 50, it will give us 8 inches of draft. Therefore the draft at the time I checked alignment must have been approximately 24 feet six inches forward and 28 feet 3 inches aft. Therefore in my opinion that was the draft when I checked the alignment.

Q. But that would be, would it not, only an approximation? A. To be sure.

Q. You would not know whether cargo was loaded forward or aft in the three forward cargo holds or in the two aft cargo holds? A. No, and neither is it shown in the logbook.

The Court: How much cargo was loaded, can you tell from the logbook how much cargo was loaded in New York between November 15 and November 18?

The Witness: I will look at it.

[310] The logbook for November 18, 1967 at 1300 hours shows completion of general loading at New York, a total of 897 tons were loaded of general cargo.

The Court: What was the draft after that New York loading had been completed?

The Witness: In other words, at the time of departure for Asia?

The Court: That's right.

The Witness: 26 feet 2 inches forward and 31 feet aft.

The Court: What time were those draft readings taken? What time and date?

The Witness: On the 18th of November, 1967, and according to what the logbook shows, at 2058 hours.

The Court: All right, thank you.

Go ahead, Mr. Kritzalis.

Q. As between Plaintiff's Exhibit 25, the alignment reading you took while the vessel was in the Philadelphia area, and as between Plaintiff's Exhibit 23, which was taken by Golten on October 11, 1967, in your opinion were those readings consistent with relationship to the vessel's draft? A. Yes, of course, because in the first case the vessel had little cargo, whereas in the second case where the sag is reduced, which we also saw in the logbook and calculated, [311] sag was reduced.

Q. When you say the first instance, you are referring to Plaintiff's Exhibit 23, are you not? A. Yes.

Q. Is it true that no wire alignment reading was taken at New York during the period November 14 to the time the vessel sailed for Jedda? A. In view of the fact that I had already done this at Philadelphia 12 hours prior, there was no reason for me to do it again at New York.

Q. You have just stated for the Court what the vessel's draft was on sailing from New York for Jedda? A. Yes.

Q. With respect to Plaintiff's Exhibit 25 marked for identification, could you make a hypothesis with respect to what the alignment of the main engine crank shaft might have been at New York? A. The alignment in my opinion on the departure of the vessel from New York for Jedda, it is probable that it may have had one to two thousandths of an inch in sag, or that it may have been straight, or it may have had two to three thousandths of an inch of hog.

Q. In all your service on board the HELLENIC SAILOR as chief engineer, to your knowledge did the vessel ever sail [312] with a perfectly straight crank shaft? A. Never. This can never happen.

Q. Why not? A. Because of the length of the crank shaft, because of the type of construction of the Doxford engine, because of the weight of the crank shaft and its accompanying equipment which amounts to 180 tons, roughly. And to be sure, in the course of its operation, never is a crank shaft operating in a perfectly straight condition.

Q. You mentioned the design of the crank shaft. A. Yes.

Q. Can you point to any specific factor on Plaintiff's Exhibit 1 that might account for your answer? A. It is the distance, for example, between the No. 1 main bearing to the No. 2 main bearing. This distance is 11 feet. And three connecting rods work in between them. And therefore it is impossible for this crank shaft to be working because of the great distance in a straight line. And this is why the manufacturers of the Doxford make the bearings of the bed spherical.

Q. To your knowledge, what was the length of the crank shaft, all four sections? A. 44 feet and 5 inches.

The Court: I'm sorry; what was that last number?

[313] The Witness: 44 feet 5 inches.

The Court: And that is the length from what to what?

The Witness: (Indicating.)

Q. That is, Mr. Evangelou, from the very front of the crank shaft to the very back of the crank shaft? A. Yes.

Q. During the time you were serving as second engineer and as chief engineer aboard the HELLENIC SAILOR, and prior to October 11, 1967, did you know what the maximum hog, or the maximum sag, of the HELLENIC SAILOR's crank shaft should be, or, could be? A. No. I do not know. And this is a matter for the manufacturer, and the manufacturer in point of fact does not mention this information in the operations manual.

Q. Have you formulated in your own mind up to that time a range, or ranges? A. If I understand correctly, you are asking me in what range the crank shaft can work well?

Q. I am asking you that and whether you had formulated those ranges in your own mind as of October 11, 1967. A. I based on the experience I have acquired on Doxford engines, and more specifically on the HELLENIC SAILOR, the engine, I mean the crank shaft, functions very well when the sag or the hog ranges around 40 thousandths of an inch. Another [314] area that arouses no fear that I have verified is the 60 thousandths of an inch. Above the 60 thousandths of an inch area the white metal of the base* bear-

* Should be "main" bearings.

ings, which are the source of this 60 thousandths of an inch, must be replaced.

Q. Were these your opinions as of October 11, 1967? A. Yes.

Q. To your knowledge did the hog or the sag of the HELLENIC SAILOR ever approach 125 thousandths of an inch? A. No, I remember no such thing, but there is a folder in the New York office, I never remember figures about three digits.

* * * * *

The Court: I thought his answer was it never got to three digits.

Mr. Kritzalis: Fine.

The Court: Getting as far as three-digit numbers. [315] I think that's what his answer—

Mr. Kritzalis: Yes, sir.

The Court: All right.

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[329] * * * * *

Q. Mr. Evangelou, at the time the vessel departed New York on the early morning of November 19, 1967, were you satisfied that the vessel's main engine, and particularly the main engine crank shaft, was fit for the voyage? A. Yes, it was.

Q. During the course of the voyage up to the time that you first learned of the fact of the fracture of the crank shaft, how was the main engine performing? A. The main engine was operating very well and this is also shown in the logbooks.

* * * * *

[332] • • • • •

Q. The parties have agreed, Mr. Evangelou, that at 0447 hours on December 4,* 1967, when the HELLENIC SAILOR was approximately 120 miles north-northeast of Massawa en route to Jedda, the vessel's main engine was stopped by the engineers on watch due to heavy knocking. A. Yes.

Q. Will you tell me the circumstances under which you first learned of the knocking? A. At that point I was asleep. The second engineer had watch from four to eight, and suddenly I heard a strong knock and the whole vessel was being shaken. Immediately I went down to the engine room and found the engine stopped. The second engineer, as soon as he heard the knock in the engine, immediately stopped the engine and in t is manner we saved the rest of the engine from its destruction.

Q. Were there means at your disposal aboard the vessel to restore operation of the main engine? A. No, unfortunately not.

Q. Did you make any efforts to repair the fracture? A. Yes, I did.

[333] Q. What were those efforts? A. Because of the fact that the vessel was being pulled by currents and by the weather, because there were high seas at the time, and the vessel was headed toward shoals—reefs, and the people aboard the ship had been terrified because the vessel had been surrounded by sharks, I sat down with the people in the engine room and I began to open—bore holes between the two fractured pieces and to tie as much on a makeshift basis as possible with plates the two pieces so that I could

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* Should be "December 24" not "December 4."

at the last moment to reverse the engine astern to prevent our drowning.

Q. Who was it who found the crack in the No. 2 after side rod web of the HELLENIC SAILOR'S main engine crank shaft? A. When I went down into the engine room, of course I did hear the knock, but I did not know from what part of the engine it was coming. I inquired with the second engineer and neither could he exactly tell me from what part. Therefore I made use of the turning gear to secure the engine and I, the second engineer, as well as the third engineer entered the engine itself, along with one or two assistants, and we began to check the various points. That is whatever we do in an internal inspection. When I was at the upper part of the engine I told the second engineer to go look from underneath at the bearings of the bed plate, but immediately I changed my mind [334] and went down below myself. When I went to see the No. 3 bearing of the main engine, I saw something like a thread on the web which was fractured and tried to remove this thread, but then unfortunately this was not a thread, it was the web which was broken. After that I informed the master that the engine could not move because the web had been broken.

Q. Was the web fractured completely through, Mr. Evangelou? A. Yes, completely.

Q. How did you determine this? A. From my vantage point, that is, the starboard side of the engine, was the point that I mentioned around that thread. From the port side of the engine the web was open, gaping, about one inch. In other words, it was quite clearly obvious that it was broken through.

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[336] * * * * *

Cross Examination by Mr. Kennedy:

Q. Mr. Evangelou, during yesterday afternoon's session [337] you testified concerning certain inspections that were made of the main engine? A. Yes.

Q. Was it your practice to note the making of such inspections in the rough engine log?

Mr. Kritzalis: I object to that, your Honor, on the grounds that his testimony was the second engineer would make the entries in the rough log.

The Court: Overruled.

* * * * *

[338] * * * * *

Mr. Kennedy: Would you read the question back to the witness, please?

(Question read.)

A. During the course of my service as chief engineer, no matter what vessel, entries in the rough logbook were made by the second engineer.

Q. Was it the practice of the second engineer to make entries in the rough engine log concerning engine inspections? A. The second engineer would receive orders from me and I would tell him whatever work you do, you enter it in the logbook.

Q. Did you give him orders to make entries in the rough engine log concerning main engine inspections? A. When a second engineer, or even a third engineer, when he first comes on the vessel during the time that I was chief en-

gineer, I would tell them certain things with respect to how I would want them to work on the vessel. Among these I would specifically tell the second engineer no matter what kind of work is done, it must be mentioned, it must be recorded in the rough log.

[339] Q. So that the second engineer was required to make entries concerning engine inspections in the rough log? A. On the basis of my instructions, yes.

Q. And did you from time to time check the rough engine log to make certain that the second engineer was making the proper entries? A. A check, no, but every day I would write information relating to the operation of the engine as respects each watch.

Q. Did you check the rough engine log? A. There is no reason, since I am in the engine room from morning until night.

* * * * *

Q. Do you know whether the second engineer generally made notations in the rough engine log concerning main engine inspections? A. Yes, as I also saw yesterday he has made entries.

Q. He did. Usually he did. A. Yes, of course.

Q. Is it fair to say, then, that if you made an engine [340] inspection the fact of that inspection would be noted in the rough engine log? A. In all inspections of the engine I was present in the engine.

Q. You are not answering my question. A. I was in the engine room and was interested in what was happening there and I was not interested what would be entered in the logbook so that Mr. Kennedy could ask the question seven years later.

The Court: All right, Mr. Evangelou, let's get something straight right now. Your job isn't to argue with Mr. Kennedy. Your job is to answer his questions and that's all. And I want you to be responsive and not evade his questions.

Now, ask your question.

* * * * *

The Court: All right.

Mr. Evangelou, the question is: If there was an engine inspection, would it or would it not be in the rough log?

[341] The Witness: It must be shown there.

The Court: That is the answer.

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[345] * * * * *

Q. When did you make the internal inspection of the main engine at Houston? On what date? A. I think it was early November, if I may consult the log.

Q. Would an inspection of the No. 3 cylinder include the entire main engine, the entire internal main engine? A. No, only the No. 3 cylinder.

The Court: What does the log say about Houston?

Mr. Kennedy: The translations that Mr. Kritzalis has provided me with indicate that on November 2, and I believe the vessel was at Houston, there was an inspection of the No. 3 cylinder of the main engine. There were inspections of piston crown studs—

Mr. Kritzalis: I will stipulate, your Honor, that the rough engine logbook bears on its face no record

of an internal inspection of the main engine while the vessel was at Houston.

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[349] * * * * *

Q. Chief, do you recall the circumstances under which you sent this document, Plaintiff's Exhibit 25, to Hellenic Lines? That is, after the taking of your deposition in this case? A. Yes, a question had arisen, I had stated that—I said that I would visit the vessel and check in the folder of the vessel and whatever I find pertinent to this, I would send it. And indeed, as I promised, I did later find a cablegram which as I found it I sent it on.

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[350] * * * * *

Q. Did you find any other alignment readings for the HELLENIC SAILOR'S main engine crank shaft on board the ship when you found Plaintiff's Exhibit 25? A. All the copies that Golten had gotten by that time and the originals of which are in existence in New York. And after that, after the Bombay visit, whatever other copies came out.

Q. Did you find any other alignment readings that you had prepared? A. Not up to the day that the crank shaft had fractured, except for that one.

Q. How many other times did you take readings on the ship? A. After the fracture?

Q. At any time while you were on the ship. [351] A. After the fracture of the crank shaft and up to today I must have surpassed 1,000 times, exceeded 1,000 times.

Q. How many did you take on the ship before the fracture? A. I by myself?

Q. Yes. A. If I remember correctly, only that one at Philadelphia.

Q. Is there any information on Plaintiff's Exhibit 25 which leads you to believe that it was an alignment reading taken at Philadelphia in November of 1967? A. On that document, of course no date is shown.

Q. Well, how did you know this was the one that was taken at Philadelphia? A. From the folder, from its folder and from the various measurements that I have made on the back of it, et cetera.

Q. On the back of what? On the back of the exhibit or the back of the folder? A. On the second page.

Q. What does the second page have to do with the first page? A. The same day all was done.

The Court: What is this folder? What is the folder you were talking about? What does that say on it?

The Witness: It is all the measurements of the [352] crank shaft that are in existence in the ship's file.

The Court: Well, how would the folder tell you whether the measurement—well, the folder would have hundreds of these things, wouldn't it?

The Witness: Not hundreds. Two or three times a year we might do that. And from 1954 to '73 is 19 years, it might have 50 pieces in there. 50 entries.

The Court: So there wasn't a specific folder for the Philadelphia reading; is that right?

The Witness: No. From its place in the series it is clear that it refers to Philadelphia.

Marcos Evangelou—for Plaintiff—Cross

Q. Did you generally date the records and documents you prepared on the ship with respect to the inspections, et cetera? A. Of course, but this is a rough document. I prepared it while I was in the engine itself.

Q. I understood your testimony yesterday was to the effect that the second document on Plaintiff's Exhibit 25 had something to do with the thrust bearing. A. I checked the clearances of the thrust bearing.

Q. You checked the clearances of the thrust bearing. Was the fact of your checking the clearances of the thrust bearing recorded in the logbook for that date? A. No, I don't think so. No.

[353] * * * * *

Q. Chief, do you recall when the alignment, the wire alignment measuring equipment was first put on board the HELLENIC SAILOR? A. It must have been around April or May of 1967.

Q. And is it your testimony that the first wire alignment inspection you made on the HELLENIC SAILOR using that equipment took place on November 13, 1967? A. Yes.

[355] * * * * *

Q. Last June when I asked you about whether the records of the wire alignment reading was recorded in the logbook, do you recall what your answer was then?

The Court: What difference does it make? Please don't ask people to recall their testimony. Now, you can read his testimony if you feel it impeaches the witness, or to refresh his memory, but not asking what he testified to, if he remembers.

Q. I asked you was it your practice to put them in, I am referring to the logbook, or was it your practice not to put them in. And your answer— A. I did not.

Q. —and you answered I did not enter them in the logbook, that is correct. And I said, therefore it was not your practice to do so. A. To enter them in the logbook. The figures that I [356] obtained I never entered them. I would write them down on a piece of paper and forward them on to the office.

Q. And that's what you would do at that time? A. After the fracture, because earlier, before that, as I said, I did this only once and did not send it.

Q. Do you recall telling me, when you said that it was not your practice to put them in the logbook, you said, "I would enter them in separate forms for this purpose, just as the existing ones"? A. Yes.

Q. Well, what forms were you talking about then? A. Certain types of sheets.

The Interpreter: From the motion that the witness made, it is the accountant's type of sheets, I think.

The Court: I am not sure whether the record shows whether you are talking about a deposition or a conversation you had with the man in a bar or what. It seems to me you had better say, you had better mention the deposition, the date of the deposition, so that the record and I know what you are talking about. Obviously you've got a deposition, but let's have it in the record. When was he deposed?

Mr. Kennedy: Your Honor, I'm referring to a deposition which was—

The Court: Well, there were several sessions. This [357] is the session of what date?

Mr. Kennedy: This is the session of June 1, 1973 at the offices of Burlingham, Underwood and Lord. And the testimony I am referring to is at page 193 of the deposition.

The Court: What is the question and what is the answer?

Mr. Kennedy: It begins at page 192.

The Court: All right.

Mr. Kennedy: To put it in proper perspective, my question was, I believe you testified yesterday, for example, with respect to Philadelphia, in November 1967 that the rough engine log shows you did a wire reading. The answer was yes.

Question: "But the figures themselves which are the results of the wire alignment readings are not in the log?"

Answer: "Yes."

Question: "Was it your practice to put them in or was it your practice not to put them in?"

Answer: "I did not enter them in the logbook."

Question: "Therefore it was not your practice to do so?"

Answer: "I would enter them in separate forms for this purpose just as the existing ones."

Q. And what would you do with these separate forms?

Mr. Kritzalis: Your Honor, may the record reflect [358] that Mr. Kennedy is reading from the depositions and the questions and answers were not inter-

preted to the witness, and I note my objection at this time.

The Court: Well, he was reading for my benefit the entire context, but the witness had answered the question before.

Mr. Kritzalis: Fine.

The Court: So that's all right.

Now, go ahead, Mr. Kennedy.

Q. Did you send these readings to your owners, the readings that you took on the special forms that were just referred to—

Mr. Kritzalis: I object to Mr. Kennedy's use of the words "special forms," your Honor.

The Court: Overruled.

A. Do you mean last year?

Q. No, no, I mean in 1967. A. I did not issue, I did not make out any others. That is the only one I made and I didn't send it out.

* * * * *

[363] * * * * *

Q. Chief, you have already identified Plaintiff's Exhibit No. 26 and that is the letter sent to you by Charles [364] Allen. A. Yes.

Q. Did you understand Allen's letter to mean that you were to take alignment readings of the vessel's main engine crank shaft? A. Yes.

Q. And did you understand that you were to take readings when the vessel was in a light condition and also when the vessel was in a loaded condition? A. Yes.

Q. And I believe you testified that the reading you took at Philadelphia was pursuant to Allen's instructions; is that right? A. Yes.

Q. It is true, Chief, that with a ship having a Sun Doxford engine, one located amidships, that when the ship is in a loaded condition, one would expect to find a hog in the crank shaft? A. Yes, this of course does happen.

Q. And is it true also that when the same ship is in a light condition one would expect to find a sag in the crank shaft? A. Yes, because in this case the heaviest part of the vessel is the engine room, and that's why.

[365] Q. When you took your Philadelphia alignment reading pursuant to Allen's instructions, did you consider that the ship at that time was in a light condition? A. It had a certain amount of cargo.

Q. Well, what do you mean by a certain amount? Would you consider it light or loaded at that point? A. Half loaded.

Q. Half-loaded? A. Yes.

Q. What is the mean draft of the ship when she is empty? A. I think it is 11 feet forward, 15 feet aft, therefore average 13.

* * * * *

[366] * * * * *

The Court: No. We have a stipulation that the mean draft of the vessel loaded is 29 feet. All right.

Q. Do you recall the figures you reported as the draft of the vessel at the time you took the alignment in Philadelphia?

* * * * *

The Court: 24 feet 6 inches forward, 28 feet 3 [367] inches aft.

Q. Now, Chief, would this draft indicate that the ship was light? A. No.

* * * * *

The Court: Yes. Let's start that over.

[368] Your mean draft empty is 13 feet. Mean draft forward* is 29 feet.

The Witness: Yes.

The Court: Now, your estimate at the time of the wire gauge reading on November 13 was 24 feet 6 inches forward, 28 feet 3 inches aft. Now, that would be a mean draft of about 26 feet, would it not?

The Witness: Yes.

The Court: Now, so you have got mean draft empty, 13 feet. Mean draft at the time of the reading 26 feet?

The Witness: Yes.

The Court: Mean draft full 29 feet.

The Witness: Yes.

The Court: Wouldn't it be 13 sixteenths full?

The Interpreter: You said 13 sixteenths, your Honor.

The Court: Yes.

The Witness: That is correct.

The Court: What percentage is that, can anybody figure that real quick?

Mr. Rogers: I little more than 80. 81.

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* Should be "full" not forward.

The Court: About 80 percent full, wouldn't it be?
The Witness: Yes, that's right.
The Court: All right.

By Mr. Kennedy:

[369] Q. Now, for purposes of Allen's instructions, did you consider that the ship, when you took the alignment reading in Philadelphia, was full or was light? Was light or loaded, I should say. A. Full.

* * * * *

(Defendant's Exhibit A marked for identification.)

* * * * *

Q. Would you describe for us the document, Chief? Can you tell us what it is? A. Yes. It has three wire measurements, three wire readings. The first one is the one done by Golten on October 11, 1967.

[370] Q. The one you are referring to is a wire alignment reading? A. Yes.

Q. What is the second one? A. The second one took place in Port Sudan on February 23,* 1968 with a telescope by an expert from Golten Marine.

Q. This is also an alignment reading; is that correct? A. The best reading that can be done, the best method, the best manner.

Q. A telescope reading gives you a better or more accurate alignment than a wire reading does? A. It is more accurate, but there has to be completely calm seas and in

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* Should be "February 3" not "February 23."

this case we are forced to have a total blackout of the vessel in order to avoid the vibrations.

Q. So the second set of readings is a telescope alignment taken at Port Sudan February 3, 1968? A. Yes.

Q. What about the third set of alignment readings? A. The third series is on the February 23, 1968, and from what I see, between the 3rd of February '68, the vessel had discharged its cargo—

[371] Q. Well, you are getting ahead of me. Do you know what—these are alignment readings taken February 23, 1968; is that correct? A third set? A. Yes.

Q. And do you recall testifying upon your deposition that these readings were taken by you and Allen? A. Yes.

Q. Now, I hand you Plaintiff's Exhibit 25 and ask that you compare both alignment readings, that is, the February 23 readings on Defendant's Exhibit A, and the alignment readings as shown on Plaintiff's Exhibit 25 (handing). A. Yes.

Q. Now, bearing in mind the draft figures that you estimated for Philadelphia on November 13 and the draft figures that appear on Plaintiff's Exhibit A for the third set of readings, is it possible that Plaintiff's Exhibit 25 is the original reading you took for purposes of the February 23, 1968 reading? A. Again, I didn't understand that.

* * * * *

Q. —Defendant's Exhibit A? Is it the same reading? [372] A. It is almost the same reading by coincidence, but the second time around, the crank shaft is fractured.

Q. Referring to the readings at Port Sudan February 3, 1968 and the readings at Port Sudan February 23, 1968 as

appear on Defendant's Exhibit A, do you recall telling me why—

The Court: Mr. Kennedy, please don't ask him if he recalls telling you. If he told you something and you want to refer him to it, read it to him.

Q. Could you tell me why there is a difference in the two readings? A. On both instances the crank shaft is again fractured, but there is a difference, there is a difference in draft.

The Court: Mr. Kennedy, I had better see those documents so I'm with you. All right?

Now, what are you—

Mr. Kennedy: I will offer the document in evidence first, your Honor.

* * * * *

[373] (Defendant's Exhibit A received in evidence.)

The Court: Now, let me be clear. You are asking him about a comparison between the bottom line of Exhibit A and what is shown on Exhibit 25; is that right?

Mr. Kennedy: That's right.

The Court: And I think the record might—it might be helpful to just read this into the record. On Exhibit 25 the readings are as follows: At bearing 1, zero at bearing 2—.023—

Mr. Kennedy: Sag. Would you show it as a sag, your Honor?

The Court: Sag. At bearing 3, sag, .021. At bearing 4, sag .035. At bearing 5, zero. And on Defendant's Exhibit A, at bearing 1, zero. At bearing 2, sag .023. At bearing 3, sag .022. At bearing 4, sag .035. At bearing 5, zero. So you've got two readings the same, and one is one thousandth of an inch different. All right.

You are questioning him now about the reason for the difference between the—the one thousandth of an inch difference?

Mr. Kennedy: No, my first question, and I believe he has answered it, is it possible that Plaintiff's Exhibit 25, that is, the readings which were taken on this document, Plaintiff's Exhibit 25, were actually the readings that are [374] reflected in Defendant's Exhibit A, that is, the February 23 readings.

The Interpreter: Do I interpret that, your Honor?

Mr. Kritzalis: That question was asked on the record and the answer was no.

The Court: No, it wasn't, no. No it wasn't. I will permit it to be asked again. I don't think it was a completely responsive answer.

You may ask it again. The objection is overruled.

(Question read.)

A. Yes, I said that by coincidence it is the same. But the crank shaft is now fractured.

Q. Is it possible that they are the same? A. Why not?

Mr. Kennedy: I am not too sure he understood that.

The Court: I am not sure of your question now. I don't want any confusion arising from simply comparing numbers. You are not asking if the numbers are the same on the two documents. You are asking, and I think you had better be clear, is it possible that Plaintiff's Exhibit 25 was based upon readings taken February 23. Now, that is your real question and I don't think there ought to be any confusion between you and the witness on that.

Q. Chief, is it possible that the readings as shown in [375] Plaintiff's Exhibit 25 were actually taken on February 23, 1968? A. Yes, they were.

The Court: Let's have the question and answer.

(Record read.)

The Interpreter: The witness wishes to speak.

A. Do you want to know if this was taken on February 23?

Q. That's right, is it possible that you may have made a mistake as to when the readings were taken? A. No.

Mr. Kritzalis: Let the record reflect that the witness was holding Plaintiff's Exhibit 25 in evidence.

The Witness: I thought that he asked me whether on the 23rd I actually took that.

The Interpreter: Pointing to the white document.

The Court: All right, his answer is no, then.

Mr. Kennedy: His answer is no.

The Court: All right.

Q. Chief, referring to the Port Sudan reading of February 23, it is your testimony that at that time the shaft was fractured? A. Yes, of course, two months had already elapsed from that point.

[376] Q. Referring now to the Port Sudan reading of February 3, and the change at No. 3 from an .026 sag—26 thousandths of an inch sag on February 3rd to the .022 thousandths of an inch on February 23, do you know of any reason for this change? A. I think that earlier the same question was asked of me and I said that the vessel was discharged.

The Court: May I see that again?
All right.

Q. Now, what caused the change at No. 4 from 16 thousandths of an inch to 35 thousandths of an inch? A. Aside from the cargo under the measurement for February 3, 1968 we had removed the pistons, the connecting rods, and in general the equipment of the No. 2 cylinder. In other words, we removed a total of some 15 tons with a broken crank shaft, and with the removal of this equipment and with the fact that the vessel was being discharged, it is not possible for us to get an alignment so that we can calculate one from the other.

Q. Are you saying that the change from 16 thousandths to 35 thousandths had something to do with removing the connecting rods at No. 2? A. Yes. Both with the removal as well as the discharge of cargo.

Q. Well, the changes at No. 4 that I am referring to, [377] would removing the connecting rods at No. 2 affect the change in No. 4? Is that your testimony? A. Yes.

Q. Just so I understand you now, in removing some 15 tons at No. 2, you would effect an increase in the sag at No. 4? A. In both the No. 4 and the No. 2.

Mr. Kritzalis: Your Honor, we are referring to numbers here, No. 2, No. 4. Are we talking about No. 2 main bearing or are we talking about the No. 2 crank section?

Mr. Kennedy: We are talking about the No. 2 main bearing.

The Court: Yes.

Mr. Kennedy: And the No. 4 main bearing.

The Court: Those are the things that are measured.

Mr. Kritzalis: I wonder if the witness knows that.

The Court: Well, the measurements, all these figures relate to main bearings.

All right, go ahead, Mr. Kennedy.

Q. Now, it is your testimony that in removing the connections for the No. 2 crank—

Mr. Kennedy: Strike "crank." It is the connections for the No. 2 cylinder.

Q. —which would be between main bearings 2 and 3, that in doing this, you account for the increase in sag at [378] No. 4 from 16 thousandths to 35 thousands of an inch?

The Court: He has already said that.

Q. Is that correct?

The Court: Let's not repeat it.

A. No, I do not. I do not believe—I am not saying this. In the first instance the draft is 24 feet forward and 29 aft, and in the second instance it is 14 feet forward and 6 aft—14 feet forward and 6 inches. And 23 feet and 8 inches aft. Therefore, from one instance to the other, the vessel took on a sag, to be sure. On top of that, 15 tons of the No. 2 cylinder were removed and the crank therefore took on a sag in the No. 4.

The Court: We've got a—

Mr. Kennedy: He has it backwards.

The Court: We have a lot of figures and I have to get this down, and understand it. Let's have the drafts on February 3 and February 23.

Mr. Kennedy: The February 3 draft forward is 24 feet and the February 3 draft aft is 29 feet.

The Court: And February 23?

Mr. Kennedy: It is 14 feet 6 inches forward and 23 feet 8 inches aft.

The Court: Well, I am not clear on his last answer at all.

* * * * *

[379] * * * * *

Q. When did you initially disconnect—for purposes of the—

[380] Q. When did you initially disconnect the pistons and the connecting rod at No. 2 crank?

The Court: And remove. The point is the removal of that weight.

The Witness: May I look it up?
The Court: Yes.

A. The disassembling began on the 24th of December when I was trying to attach the plates that I had mentioned earlier.

Q. Were they disconnected on February 3?

The Court: Wait a minute. Just let him find out when the equipment was removed, will you do that?
Mr. Kennedy: Yes.

A. On the 9th of January the crank was already freed in the No. 2.

Q. And by this time the 15 tons of equipment that you referred to earlier were removed from the No. 2 crank? A. Yes.

Q. Referring to Plaintiff's Exhibit 1-A, could you indicate to us exactly what was disconnected? A. To begin with, we unloosened these four nuts (indicating).

The Court: He is pointing to No. 3 cylinder.

Q. Would you point to No. 2, Chief? You removed four [381] nuts and where are they located? A. On top of the engine. The highest point of the engine. We have pictures that show them if you want to see them.

Q. And what else did you remove? A. And after this all around here there are certain nuts (indicating). And that causes the upper piston to be removed along with the transverse beam.

Q. So at that point the upper piston and the transverse beam are no longer exerting pressure on the crank shaft; is that right? A. Yes.

Q. Did you disconnect anything else? A. After that, by unloosening this nut (indicating)—

Q. Which nut are you referring to? What is that called? A. The lower piston tightening nut for the central cross.

The Interpreter: The witness added earlier that the lower piston was removed.

Q. This took the weight of the lower piston off the crank shaft; is that correct? A. Yes.

Q. Did you also disassemble the No. 2 cylinder forward side connecting rod? [382] A. First these side rods, and after this, the connecting rods and the cross-heads.

Q. Does this disassembly, that is, of the No. 2 forward side connecting rod, also take weight off the crank shaft? A. Yes.

Q. And this is part of this disassemblement operation that you are referring to; is that correct? A. Yes. We also, we removed this central connecting rod.

Q. Did you dismantle also the after side connecting rod of the No. 2 cylinder? A. Yes.

Q. And this is part of this disassembly operation? A. Yes.

Q. You said it was disassembled as of February 3? A. Yes.

Q. And do you recall when the decision was made to replace the crank?

Mr. Kritzalis: Objection, your Honor.
The Court: Overruled.

A. If I look up my logbook showing my work which I have sent on to New York, I will tell you exactly.

Q. Would it have been— A. I think it is the 7th of February.

[383] Q. —7th of February? After this decision was made would there be any reason for you to assemble the connecting rods back onto the No. 2 crank? A. One reason was where to put all these pieces.

Q. So you put everything back together? A. I would say rather yes.

The Court: I thought you said that they were put back in Bombay.

Mr. Kennedy: Well, then he changed his testimony and said he—

The Court: Well, it was not clear to me. Doesn't the log show when—well, does the log show the day or the days when the No. 2 cylinder equipment was put back in place?

The Witness: Yes.

The Court: Well, let's look at it. Find it.

A. I began to remove completely from inside the engine these disassembled pieces starting on the 17th of February, 1968. It is possible for the pistons and the connecting rods to be inside the engine and for the connecting rods not to be connected to the crank, and all of the weights are placed on plates hanging.

Q. Chief, you used the date 2/17/68. That is February 17, 1968.

The Court: Then he started talking about what is [384] possible. Now, what I thought we were trying to get at is when was that weight out of that—15 tons out of the engine room, which would have the effect of relieving the sag.

Now, let's try to get that and not talk about possibilities.

Q. Chief, referring to your logbook February 17, 1968 under the work section, Item 3. A. Yes.

Q. Does that work translated mean disassembled No. 2 cylinder forward side connecting rod? A. Removed forward side connecting rod No. 2 cylinder.

Q. Is this part of the work involved in getting the 15 tons off the crank shaft? A. We said this had already been removed and was hanging in the engine.

Q. Oh, it had already been removed? A. Yes. From the crank shaft, yes.

Q. Was it removed as of February 23? A. Yes, of course, since I arrived, I removed it on the 17th.

The Court: Where was it removed? Was it removed from the engine room to another place on the ship?

The Witness: From inside the engine and placed in an area inside the engine room.

[385] Q. So that isn't it true that on February 23, 1968 this 15-ton load that you referred to earlier was not putting

any force or any pressure on the crank shaft? A. Yes, it was not.

Q. Chief, you testified as to your internal inspections of the main engine crank case. A. Yes.

Q. And one of the things you do is check for loose or broken bolts in the bedplate; is that correct? A. Yes.

Q. Do you generally find loose bolts in the bedplate or broken bolts in the bedplate? A. Many times.

Q. It is not unusual? A. No. It is not.

Q. You said you checked all surfaces with a flashlight for cracks? A. Yes, exactly.

Q. Did you check the main crank webs for cracks? A. Whatever surface is observable in the engine I look at.

Q. Do you get up real close to it? A. Very close. I touch it with my hand.

Q. And is the same true of the side webs? [386] A. To the extent that they can be seen, yes.

* * * * *

[387] * * * * *

Q. You testified concerning main bearing clearances. A. Yes.

Q. Would you tell me what the recommended clearances are for main bearings in the HELLENIC SAILOR Sun Doxford? A. 12 thousandths of an inch, lubrication clearances and 4 thousandths of an inch spherical clearances.

The Court: What is the point of this? Do you claim that the clearances were not proper?

Mr. Kennedy: I wanted to find out what he considered proper clearances. He said he checked the clearances with the feeler gauge.

The Court: Where does that leave us? Is it just an academic interest or are you going to establish that there were clearances that were not proper?

Mr. Kennedy: Well, I want to find out whether he knew what clearances were proper. Because if he didn't, then [388] it is difficult for the owner to exercise—to prove exercise of due diligence—

The Court: Please don't go through and ask the man for all his knowledge unless you are going to lead somewhere. I assume after all the discovery that's been had and a three-volume deposition of this witness, you know where you want to go with him. Now, we've got two experts waiting here, one from Sun and one from Golten, and I want to hear these experts and if you've got anything to bring out on cross, do it, and if you don't, just wait for your own experts.

Q. Chief, do main engine bearing clearances have anything to do with crank shaft alignment? A. Yes.

Q. Would you explain to us the relationship between main bearing clearance and crank shaft alignment?

The Court: You know, I think I know that. I think we have been through it. Obviously if the bottom of the main bearing has an improper clearance and is pushing up that bearing, that bearing will not be in the same alignment as the next bearing where the clearance is different and the bottom of the bearing is not pushing it up that way. We have been through this.

Mr. Kennedy: I will withdraw the question.

* * * * *

[390] * * * * *

The Court: Have the lawyers explored these markings on Exhibit 25 that seem to be made, say, from a sheet of paper above this and that show through. There are figures that show through on Exhibit No. 25, like the part of a pencil made, but the lead doesn't show. It is as if someone was writing on the next sheet above this, and then the writing shows through without the lead.

Down at the bottom you have got an 023 and 022 and 035.

Have you explored that?

Mr. Kritzalis: No, sir.

Mr. Kennedy: No, sir. I have a Xerox copy.

The Court: Those are the February 23rd figures.

Mr. Kritzalis: Your Honor, if I may, it is not solely the figures. There are lines overlaid—

The Court: Yes, and there is a lot there.

Mr. Kritzalis: There is a lot there, your Honor. I have not explored it, and it has been brought to my attention now for the first time.

The Court: All right.

Cross Examination by Mr. Kennedy (Continued):

Q. Chief, referring to Plaintiff's Exhibit 25, [391] I note that there appear to be indentations showing that other figures and other lines had been written perhaps on

another piece of paper over this piece of paper, or on other pieces of paper over this piece of paper.

Can you account for the presence of these indentations? A. It's full of lines, but what it refers to, I do not know.

Q. Do those lines look like other alignment readings had been taken on the pad which this exhibit came from? A. It is probable.

Q. It is probable?

The Court: What was the question and answer?

(Question and answer read.)

The Witness: It is possible that this pad was used there, that I may have first drawn other ones and that I may have made some mistakes in my calculations, and as I was removing sheets from the pad this was the last one and those impressions were left on it.

The Court: I want you to mark that answer, Mr. Reporter, and will you read it back to me?

(Answer read.)

Q. Chief, can you find any similar impressions on the document, the second sheet attached to Exhibit No. [392] 25? A. No, because this paper has wording from the second engineer when he was measuring the clearances. Just as this paper also has a date on it. How could I remember whether we used the same pad or not?

Q. Is it your testimony, chief, that you had difficulty in preparing this alignment reading? A. It is not a matter of difficulty. It is that I take the measurements from the

micrometer, take the various curves that I obtain from that book, the Chester book—

The Interpreter: I don't know what he called the book.

A. The book that Mr. Kritzalis has. It shows various curves.

Q. Well, were you having trouble getting a measurement, or were you having trouble plotting the results of your measurements? A. The difficulty with respect to the preparation with pencil. I didn't like my lines, I didn't like the distances.

Q. It wasn't that you were having difficulty getting figures; is that correct? A. That's right.

[393] Q. The difficulty was that given the figures you got you had difficulty putting them into a proper perspective on the diagram; is that what you are saying? A. Yes.

Q. I refer you to an indentation which begins at the top left-hand part of Plaintiff's Exhibit 25 and ask you if at about the time you prepared this document you plotted the line that is shown there, and the line I am referring to begins in the left-hand corner of the document.

Do you see that line? A. Yes.

Q. Is it your testimony that in translating the readings that you found in the crankshaft with respect to alignment on November 13th you at one time plotted the lines that I am referring to? A. Yes, on a piece of paper that was on top of this.

Q. Assuming that this line is a measurement, or represents a measurement of alignments in a crankshaft, is it

not true that the maximum point of sag insofar as we can see the line would be at main bearing No. 3? A. You mean here (indicating)?

Q. I am referring now to this line up here at the top of the page (indicating). A. No.

[394] Q. It wouldn't? A. No.

Q. Where would it be? A. The No. 3, would it be?

Q. Looking at this line that you plotted, where would the maximum— A. Since it begins there let's assume that it's either the No. 1 here (indicating) or the No. 5.

Q. All right.

Let us assume it is the No. 5. A. There the No. 4 would be, there the No. 3 would be (indicating).

Q. Now, which is "here"? The No. 3 or the No. 4? A. The No. 3.

Q. So is it fair to state that in plotting this line the sag was lower at 3 than it was at 4? A. Yes, of course.

Mr. Kennedy: Does your Honor wish to see this?

The Court: Yes.

Mr. Kennedy: Would it help if we in some way traced that line, or is it—

The Court: I wouldn't. All right.

By Mr. Kennedy:

Q. Chief, I believe you testified that you thought [395] you showed the Philadelphia readings of November 13th to Mr. Allen when you were in New York; is that right? A. Yes, I must have shown them.

Q. Do you recall whether Allen said anything at the time you showed him the readings? A. These readings show the crankshaft to be in perfect operating condition.

Q. This is what Allen said to your recollection? A. I do not remember what Allen told me exactly. But he could not tell me that we had a problem of the crankshaft with these readings.

* * * * *

The Court: Sustained. Mr. Kennedy, sometimes I miss things when I am trying to make notes, [396] but I would appreciate your just going through, even though it repeats, when was it that he told Allen, where was it, and everything that was said by either one, and who else was present, and just get the whole setting and the whole conversation. Just get it in his words and have him stock* to that.

Q. When did you show the alignment readings to Allen? A. In November of 1967.

Q. At what city was that? A. In New York.

Q. Were you both on the Hellenic Sailor at the time? A. In Brooklyn. We must have been. How could I remember after 7 years?

Q. Do you recall whether you may have been in the engine room at that time? A. I cannot answer. What should I answer?

Q. Do you recall the substance of any conversations you may have had with Allen when you and he were to-

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* Thus in the original.

gether at New York, wherever you were? A. We were always discussing about ships and engines, just as engineers would.

Q. Did you discuss the crankshaft, the particular crankshaft on the Hellenic Sailor? A. There was no reason.

[397] Q. Did you discuss Allen's letter of November 6, 1967?

Mr. Kritzalis: Objection, your Honor. We still have not established when or where he spoke with Mr. Allen, if he did.

The Court: Overruled.

A. Rather so.

Q. What did you say to Mr. Allen? A. There was no problem so it's not necessary, there was nothing specific for me to discuss and for me to remember seven years later, anything substantial.

Q. Is it your testimony that you don't remember what you said to Mr. Allen? A. To be sure I do not remember.

Q. Now, did Mr. Allen say anything to you? A. I cannot remember this, either.

The Court: Do you remember whether you showed him any paper recording the readings or not?

A. To begin with, unfortunately I do remember no such thing.

But since he did send me a letter at Philadelphia to look at the crankshaft, it was my obligation to do that work that he told me to do.

On going to New York I believe that I told him [398] that these are the readings of the crankshaft, and he himself seeing that there was no reason for us to be anxious about it, he wished me bon voyage.

Q. Chief, is there any significance to the writing that appears in the Greek language on Exhibit 25? A. Right here (indicating)?

Readings were carried out with all the bearings loose.

Q. Do you generally carry out readings with the bearings loose? A. On certain occasions, yes, on certain occasions, no.

Q. On what occasions do you take readings with the bearings loose? A. If at the port that we may be visiting there is enough time I consider proper for me to loosen the bearings so that I can look at the white metal inside.

Q. How much time did you need to loosen the bearings? A. Two hours.

Mr. Kennedy: I have no further questions, your Honor.

The Court: All right. Is there any redirect?

Mr. Kritzalis: Two questions.

[399] The Court: All right.

Redirect Examination by Mr. Kritzalis:

* * * * *

Q. Referring now to the first sheet of paper which is Plaintiff's Exhibit 25, is it possible that you made [400] a mistake and that the readings contained thereon were not the readings of the crankshaft alignment which you testified you took on November 13, 1967?

Mr. Kennedy: I object. He has already answered the question twice.

The Court: I will allow it.

Mr. Kritzalis: Would you read back the question to the witness, please?

(Question read.)

A. These are the measurements I took on November 13, 1967, at Philadelphia.

* * * * *

[403] * * * * *

The Court: Mr. Kennedy, Defendant's Exhibit A was just a summary of other readings; is that right?

Mr. Kennedy: This was a report prepared by the chief, summarizing other readings. They are not original readings.

The Court: All right.

Now, where are the original readings for February 23?

Mr. Kennedy: I believe Mr. Kritzalis would probably have the original. I would have copies of the originals, though. I don't have a copy of the February 23 reading other than the one Mr. Evangelou produced.

Mr. Kritzalis: Excuse me, your Honor. Do you mean the original of Defendant's Exhibit A or do you mean the rough—

The Court: No, I don't mean the exhibit. I mean the original documents pertaining to the February 23 reading.

[404] Mr. Kritzalis: We have produced everything, your Honor, that was in the shipowner's file in response to a request—

The Court: Just specifically answer my question. Where are the original documents pertaining to the February 23 reading? Defendant's Exhibit A is just a summary, it was not an original document. I am not talking about the difference between a Xerox and—

Mr. Kritzalis: I appreciate that, your Honor. That's what I am explaining to your Honor. We have produced everything that was in our files and everything that we have.

The Court: You haven't produced it to me.

Mr. Kritzalis: Well, my suggestion is, your Honor, that a request went from me to the client to produce everything and they have produced—

The Court: Did they produce any original papers, either on an official form or on a worksheet or both, pertaining to the February 23, 1968 wire gauge readings?

Mr. Kritzalis: Other than that one that has been marked as Defendant's Exhibit A for identification, no, sir. In other words, we do not have the rough of the chief—the rough form or whatever, whatever calculations the chief engineer made. We only have in the—I have only been given by the plaintiff what we have produced for Mr. Kennedy. We [405] have produced everything that we have been given.

The Court: Well, to say the least, I have grave doubts about that Plaintiff's Exhibit 25 as to whether it really pertains to Philadelphia. I think that is ob-

vious from yesterday's proceedings. And as far as I am concerned right now, I have no—I have nothing that I could rely upon as constituting readings taken at Philadelphia on November 13.

Mr. Kritzalis: Fine, your Honor. I would address myself to the issue of production. We have asked for everything, most everything was given to us by Hellenic Lines before the chief engineer's deposition took place on May 31, June 1, and June 2. The document of course which has been marked Plaintiff's Exhibit 25 was not in our possession at that time. During the course of the deposition of the chief engineer it developed that readings were taken on the 13th of November and that they might be pertinent to this case. Mr. Kennedy requested the document. When the chief engineer was in our offices during the course of the deposition, he said, "I am going back to Greece, when I go, I will look for it and I will send it back." He then sent back to Hellenic Lines the original of a letter which I hand up to your Honor. It is dated—

The Court: Attaching Plaintiff's Exhibit 25.

Mr. Kritzalis: Dated June 18, 1973, and it includes [406] five numbered items, the first of which is 20 photographs which have been marked here collectively as Plaintiff's Exhibit 7. The second numbered item was Plaintiff's Exhibit 25, and it says, "Reading alignment of crankshaft by wire and clearances of thurst bearings taken in Philadelphia on 12/11/67 and shown in the yellow sheets."

Now, of course, the clearances of thrust bearings taken at Philadelphia on 12/11/67 probably is reasonable, because that date appears on the face of that document. There is no date on the second sheet which is the wire alignment readings. I am not a technician and I can only go with what somebody provides me.

The Court: This is the testimony of the witness, but I must say that—

Mr. Kritzalis: Well, your Honor, the plaintiff therefore will not rely on Plaintiff's Exhibit 25 with respect to the due diligence—

The Court: Then what is your diligence? If I cannot find that you took a reading, or even if I found that you took a reading and I don't know what that reading was, on either supposition what is your diligence? I mean, I just think that the diligence case is—

Mr. Kritzalis: If I may, your Honor, the diligence is the following: We do have the October 11, 1967 alignment [407] reading taken in New York before cargo was begun to be loaded on the voyage at issue. You will hear expert testimony with respect to that alignment reading, alignment readings in general, and what those alignment readings are designed to measure. From that we will go to what they did measure on October 11, 1967, and generally what they stated, not with respect to the—well, they will tell your Honor what alignment readings are intended to tell any technician, and—

The Court: This is premature, but you know, there is no jury here and you might as well know that the problem to me right now at this juncture of the case is this: You've got the burden of proof on due diligence.

Mr. Kritzalis: Yes.

The Court: You've got a group of alignment readings, now, right now, just the numbers themselves don't in and of themselves mean a lot to me. Whether they indicate a danger, or abnormality—I have heard Mr. Petsis, I have heard Mr. Evangelou, and they certainly would indicate that—well, we have all heard their testimony. But one thing does stand out, and that is that the chief engineering official of that company in a letter of November 6 said that additional readings should be taken and he said that the readings of October 11 were in excess, he spelled it wrong, but it is in excess of what is desirable. Now, that—

[408] Mr. Kritzalis: He also, your Honor, testified—

The Court: Just a minute, now. Then I haven't heard his testimony and I haven't seen his deposition, but he did ask that further readings be taken. Now, on the record before me it seems to me that I can't find that any other readings were taken. I can't find that you have satisfied your burden of proof that his directives were complied with. And it just happens that the fracture of this—in this crankshaft occurred at the point of the maximum sag under the October

11 readings, and it happens that that is the subject of Mr. Allen's comments. And how can I find that you have sustained the burden of showing due diligence?

* * * * *

[409] * * * * *

The Court: But you did have the opportunity.

Look, I am injecting this questioning. I am sure it is premature, but it may serve some purpose to you and to Mr. Kennedy and Mr. Toy to show you what my questions are at [410] this point and if it does, that's fine, and please, I am really not prejudging the case without hearing the evidence, but I can't help but at least tell you my questions, and why don't you go ahead with your proof?

Mr. Kritzalis: First let me thank your Honor for taking the time to look at that document more closely. I am frank to say that it never came to my attention, I would never have had any reason to hold the document up to the light, let us say, so that I could note the fact that there were other impressions on Plaintiff's Exhibit 25. But I will say that the plaintiff's burden doesn't—the plaintiff does not rely on Plaintiff's Exhibit 25. What the plaintiff relies on is the October 11, 1967 reading. We would have hoped to fill in the interstices, and that's why we asked for the document, why Mr. Kennedy had a right to see it.

The Court: Oh, there is no question about it. Yes. Well, there is no problem. But you go ahead with your—

Mr. Kennedy: Your Honor, may I address myself to the point concerning what documents Mr. Evangelou was to send back from Greece? At page 185 of the deposition, at line 14, Mr. Kritzalis—no, I said, will you, when you return to Piraeus, get for us a complete copy, if you can, and if it can be found, of any folder which contains alignment readings from the ship. And the answer was, "With pleasure."

[411] The only thing we received from the chief was Plaintiff's Exhibit 25.

SIGURD GOLTEN, called as a witness by the Plaintiff, was duly sworn and testified as follows:

Direct Examination by Mr. Kritzalis:

Q. Mr. Golten, by whom are you presently employed? A. By Golten Marine in Brooklyn.

Q. In what capacity? A. As the president.

Q. How long has Golten Marine been in existence? A. Since 1941.

Q. Did you found the company? A. Yes.

Q. What kind of work does Golten Marine do? A. Well, mostly diesel repairs. And on ships, 95 percent of that, too.

Q. 95 percent of the work is on diesel ships? A. Diesels, yes.

Q. Ship diesels. Does that work have anything to do with main bearings? [412] A. Every day.

Q. What kind of work is done to main bearings? A. Well, if a bearing is worn out, or burned out, we take it to the shop, rebabbitt it, and bore it to a size that is required.

Q. Rebabbitting is replacing the white metal? A. That's right.

Q. And boring is— A. In a machine.

Q. Machining the white metal? A. Yes.

Q. Could you describe the extent of your facilities in Brooklyn? A. How many men working, you mean?

Q. How many men and how big the plant is. A. Well, we have, I would say, between—don't hold me to this, but I think between 150 and 180 men. And we are covering 90 some thousand square feet around.

* * * * *

[415] * * * * *

Q. You mentioned that you have a plant in Brooklyn. Do you have any other plants? A. Oh, yes.

Q. Where are they? A. In the States I have one in New Medford, Massachusetts, one in Portland, Maine, all in ship repairs, one in Los Angeles, one in Hong Kong, one—in these days we are setting up a place in Singapore, and we are in combination with Globe Engineering in Capetown. We have a place in Rotterdam in Holland. We have a place in Oslo in Norway. All these has to do with ship repairs and crankshafts and bearings.

* * * * *

[416] * * * * *

Q. Is part of the service available from Golten Marine in Brooklyn wire alignment? A. Yes. Wire alignment, telescopic, and nem light. We have three.

Q. Does Golten Marine also do the deflection test between center webs? A. Every day of the year except Christmas day.

Q. Briefly what is the deflection reading intended to measure? A. It will tell you how the shaft is laying in the bearings.

Q. What do the other three tests that you mentioned, wire alignment, telescope and nem line tell you? A. Telescope, you have—

> The Court: That is called a telescopic test?
>
> The Witness: Yes, telescopic reading we call it. We have an instrument that we can in 60 feet determine about one thousandth out of line. That's the closest. But we have to stop all the—any moving part in that ship can't vibrate. [417] Even an auxiliary we have to stop. We have to put the ship dead to use that telescopic so we don't use it too often.

Q. All right. Let me go back to the wire alignment reading. Does the wire alignment reading measure the same thing as the reflection reading? I am not now talking about how it is done or where it is done, but does it measure the same thing? A. Yes, in one way, yes.

Q. What is that? A. Well, it tells you how the shaft is laying in accordance to the bearings.

Q. How the shaft sits in the bearings? A. It is a cylindrical thing that rolls—rests on the bottom bearing which is a half circle.

Q. So that if the bearings are low, the reading will tell you how low the shaft is in the bearing? A. Oh, yes, within a thousandth.

Q. Within a thousandth? A. Yes.

Q. A thousandth of what? A. Of an inch.

Q. And if the bearings are high the wire reading will tell you how high the bearings are? A. That's right.

[418] The Court: Wait. Again summarize, what does the wire alignment reading measure tell you? You said it a moment ago.

The Witness: It tells me the height of the shaft, how far up or how far down it is according to a straight line, through the center line. If you think of the center line a perfect line through the shaft—

* * * * *

[424] * * * * *

Q. What would those readings tell you about the main bearings? A. If they are too high or too low according to the center line that we have to think of.

[425] Q. If they are too low, would that be reflected in the map? A. Oh, yes.

Q. And if they are too high would that be reflected in the map? A. And they tell you how much, too.

Q. And if, say, the No. 2 was too high in relationship to the No. 3 which was a little lower than the No. 2 that would also be reflected?

The Court: Please, I've got a little sense, Mr. Kritzalis. Let's try to get to the significance of—

what the readings were and the significance of the readings.

Q. Would those wire alignment readings tell you anything about the condition of the main engine crank shaft? A. Not the condition of it.

Q. Of the shaft itself? A. No, not the condition of it, but the way it is laying.

Q. They will tell you how it is laying in the main bearings; is that correct? A. Yes.

Q. And the readings would tell you whether work needed to be done to the main bearings; is that correct? A. Yes.

* * * * *

[427] * * * * *

Q. Does the vessel have to be dead for the—in other words, do all auxiliaries have to be off in addition to the main engine, the main engine for the purpose of the telescopic reading? [428] A. Most of the time, yes.

Q. Why is that? A. Because the vibrations—it vibrates from the auxiliary engine going.

Q. The vessel will vibrate? A. Yes.

Q. And you wouldn't get an accurate reading? A. No. You can't see clear.

Q. Do you have that problem when you do the wire alignment reading? A. No.

The Court: Is the telescopic test under the right conditions, is that more accurate than the wire reading?

The Witness: Yes, it is, a little more.

Q. And those right conditions are a dead ship; is that right? No auxiliaries— A. You have to, most of the time you have to lay it dead all the way through.

* * * * *

[429] * * * * *

Q. Are you familiar with Doxford engines built by Sun Shipbuilding and Drydock Corporation? A. I think I am.

Q. When did you first become acquainted with the type of engine known as a Sun Doxford engine? A. It was around 1950.

Q. 1950. A. Or maybe a little before.

Q. During that period of time what characteristics of the Sun Doxford impressed you with relationship to the main engine crankshaft? A. The crankshaft on a Doxford is flanged together each section. A Doxford built in England or wherever it is, they have it built in two sections, the whole thing.

Q. In other words, Doxford had the crank in two sections? A. Sun Doxford each unit, for each cylinder, is flanged together to the next one.

Q. Would that be one throw? A. Yes, one throw—it shows on the drawing here, too.

Q Is it your testimony that the British Doxfords would have the whole shaft— [430] A. In two. In two.

* * * * *

Q. What could you tell us about the bearings of the Sun Doxford engine? A. Well, they are self-aligned, in the main—

The Court: The bearings are what aligned?

Mr. Kritzalis: Self.

The Witness: Self-aligned. Spherical. That means you have a ball board* through with babbit insiding. We call [431] it self-aligned. Or spherical, they call it, I guess. We call it self-aligned. In other words, the bearing is a ball with a hole through it and the shaft is going through it.

The Court: You are talking about the main bearings?

The Witness: Yes.

Q. Now, when you make that motion with your arms and hands, Mr. Golten, of course it doesn't come out on the record. Could you describe the motion that is made by the crankshaft, specifically the crankshaft's main journals as they operate within the main bearings? A. Well, of course the shaft rolls around, but you have stresses and give and take on the crank pin; right? So the shaft, if this was the crankshaft right here, it gives like this here all the time it goes up and down. And the bearing is a self-aligned bearing, I think you have it on the drawing here, too—yes, you have it. So the bearing will lay there rolling a little since it is a ball. It is really a ball inside—

Q. A ball? A. You can call this a ball.

Q. Is the word you are using "ball"? A. Self-aligning, this is a self-aligning, this is a round thing in all directions (indicating).

If you took a bore through it you would call that a [432] self-aligned bearing. I cannot separate it right down on your window here.

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* Should be "bored" not "board".

The Court: I think I get the point. In other words, the spherical bearing permits this journal to adjust, I guess, in all directions, doesn't it?

The Witness: That's right.

The Court: All right, I get that.

The Witness: The shaft will go a little bit like this here, let us say.

The Court: Now, when you say the shaft, you are talking—

The Witness: The crankshaft.

The Court: Do you distinguish the crankshaft from the journal?

The Witness: No, the crankshaft is all these here around, this is the crankshaft.

The Court: The webs and the whole business.

The Witness: The whole business is the crankshaft, cranks. Crank around. But the crankshaft would never spin like an ordinary straight shaft. It will give like this here and that's why they have the self-aligning deal to roll in.

The Court: Wait a minute. In other words, the shaft will never just spin perfectly—

The Witness: On its own center, no.

[433] • • • • •

Q. How would you characterize that motion? A. Well, I think that Doxford took a reading of it at the time, this was during the war, yes, Mr. Smith will tell you more about that, they took the tests and I think they found out that it gave in between—if I don't remember wrong, this is from the war years, I think it came in 125 thousandths—

one eighth of an inch—this is from memory years back, but I think I—

Q. What was your last answer? Where would the 125 thousandths of an inch be? A. Here.

Q. Where? A. Between here.

Q. The two center webs? [434] A. Yes, when this kicks in this will be in top position, this will give. You will find the distance here in the bearing plenty—

The Court: What is that, a deflection?

The Witness: Yes, it is, really.

The Court: I used the term vertical axis. I think that was wrong. We are trying to get on the record the kind of motion you are describing with your hands, you see. We are not taking any movies of you.

The Witness: Let me explain. This is a shaft—

Q. Mr. Golten, his Honor can see you, but if you are trying, verbalize the motion so the reporter will get it. A. This is a straight shaft. If the shaft was going fine, I mean there wouldn't be any—a crankshaft would give here and give there, it would be like a garden hose, the crankshaft. I have to use that expression. The crankshaft is living like a garden hose.

The Court: Is there no term?

The Witness: The shaft is flexible.

The Court: The shaft is flexible. It will not rotate around a straight vertical—the same vertical axis?

The Witness: No.

The Court: The axis itself will twist around it; is that right?

[435] • • • • •

Q. How do the Sun Doxfords differ from regular marine diesel crankshafts? A. Well, they have three cranks, one center crank and two side cranks to each cylinder. Because they have an opposed piston deal.

Q. Do you mean pins? You said cranks. A. Yes, cranks. We call it crank. Crank pin.

Q. Crank pin. A. Yes. And that is the big difference between them. An ordinary diesel has just one crank pin like you use a grinding stone.

Q. What about with respect to the main bearings? A. Well, they have three crank pins between each bearing so they got a longer distance between the bearings on the Doxford than any others.

[436] Q. Do all marine diesel engines have spherical bearings? A. No.

• • • • •

[437] Q. In other words, this piece shaped like a Z, if you will, starting at the back end of the No. 2 crank section, or the flange, is solid and incorporates the main journal, the after side rod web and the pin; is that correct? A. And shrunk into this web here.

The Court: Wait a minute now. In other words, there is one piece, one continuous piece of metal consisting of that flange. Point the flange out. Why don't we label that "flange"? Here is a red marking pencil (handing).

Now, let me see what the flange is. All right, I see the flange now. Then the flange is attached, solidly attached to the journal; is that right?

Mr. Kritzalis: Well, it's one forge, Judge.

The Court: Then the web is also part of that forging; is that right?

Mr. Kritzalis: Right.

The Court: Now, is the web one forging with the pin?

Mr. Kritzalis: Yes, sir.

Is that right, Mr. Golten?

The Witness: Yes.

The Court: Is that right?

[438] The Witness: Yes.

The Court: Now, is the pin one forging with the next web?

The Witness: No, this is a shrunken deal.

The Court: It's a what?

The Witness: A shrunken deal. You bore a hole smaller than the pin, heat the web, put the pin in, the pin is cold and that's the way they do all the shafting.

The Court: All right.

Now, if my left hand is the pin and my right hand is the web—

The Witness: Yes, you are right. When they build this here this is in one piece now and the hole is bored through here (indicating).

The Court: But look, this hand is the pin, this hand is that big web (indicating).

Now, does the pin rotate differently from the web? Do they slide around?

The Witness: No.

The Court: They are solid?

The Witness: Solid like one piece.

The Court: Like one piece. But they are attached by—

[439] The Witness: Shrunk together.

The Court: (Continuing) —by this shrunken process.

The Witness: Yes, that's right.

* * * * *

[441] * * * * *

Q. Mr. Golten, let's assume this is a hole in the after center web (indicating); and let us assume my two fingers are the after side connecting rod pin of the solid forging that we are talking about.

Now, if I put my fingers through the hole on the web, and we are talking about the after center web, how does that stock in there and not come out and not rotate? A. The hole is bored much smaller than the pin size.

Q. Than the diameter of the pin? A. Yes.

Q. In other words, the diameter of the hole in the [442] web is smaller than the diameter of the pin? A. So we heat that, somebody freezes the pin and they put it in and it comes together.

It's like solid rock.

Q. The heat causes the hole in the web to expand? A. And it comes in and the pin comes in, and when it cools off it's solid.

[443] Q. As the web cools off the hole shrinks and that gives you your shrink fit? A. Yes.

* * * * *

* * * * *

Now, look. In the Sun Doxford en-
necting rod bearings are not spherical
they?

s: No.

But on the English Doxford, those
spherical?

s: All spherical.

All right.

Sun Doxford the main bearings are
on the British Doxford; is that cor-

a deflection, in other words the dis-
webs, of about 125 thousandths of an
der full load. But don't hold me to it.
ght.

* * * * *
* * * * *

is: The parties have stipulated, your
laintiff's Exhibit 29 marked for identi-
chematic diagram of the replacement
—the new replacement section for the
k.

Court: All right.

is: Showing modification on there. If
night look at it, I could quickly clear
two (handing).

All right. Is this the—

is: It is the whole thing. This is the
o. 2—

The Court: Is this the drawing of what was
in the HELLENIC SAILOR? Are you telling me th

Mr. Kritzalis: Yes. In place of the broken o

The Court: All right. Are you offering it
evidence?

Mr. Kritzalis: Not at this time, your Honor.

The Court: Are you going to—

Mr. Kritzalis: I just want to clear up a possible

The Court: Well, if you are using it to clear it u
let's have it in evidence because I really should
be looking at it if it isn't in evidence.

Mr. Kennedy: No objection.

The Court: All right. Received.

(Plaintiff's Exhibit 29 received in evidence.

* * * * *

[453] * * * * *

Q. Mr. Golten, assuming for the purposes of your alig
ment that the zero point is a straight line between mai
[454] bearing No. 1 and main bearing No. 5, had you ove
the years since 1950 determined with respect to Sun Dox
ford engines what the departure from zero should be a
the Nos. 2, 3, or 4 main bearings with respect to the bear
ings? A. Well, the straighter the line you have the bette
you are off.

The Court: I can't understand you.

Mr. Kritzalis: The straighter the line you hav
the better you are off.

The Witness: The center line when you have t
take the center line through the shaft.

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Q. Did you have a straight line on a crank shaft? Main engine crank shaft? A. No, never.

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[455] * * * * *

Q. Mr. Golten, for how many years was Golten Marine performing services for vessels owned or operated by Hellenic Lines? A. At the beginning of 1950 I think we started with them.

Q. And your work for Hellenic Lines over the years consisted of what? A. Up to today.

Q. What would you do for Hellenic Lines? A. Anything they asked me to do.

[456] Q. This would be in connection with what—with relation to main engine crankshafts and bearings, what would you be asked to do? A. Oh, we have ground quite a few of them, ground the base—

> The Court: I assume he would do for Hellenic Lines what he would do for any shipowner; right? All right.

Q. I hand you Plaintiff's Exhibit 23 in evidence which the parties have stipulated is an alignment reading performed by your organization (handing). A. I recall this is—

Q. What conclusion do you draw from Plaintiff's Exhibit 23 in evidence? A. Once more?

Q. What conclusions do you draw from that alignment reading? A. Well, it is a dream reading.

The Court: A what?

The Witness: It is so good that if I should get it any better it would take me probably days to get it any better.

The Court: A dream reading?

The Witness: Yes.

The Court: Meaning so good?

[457] The Witness: That's what I mean. You are probably not used to that expression, but—

The Court: All right.

Q. You say it is a dream reading, Mr. Golten. Why is that? How would I as a layman looking at that know whether it is a good reading or a bad reading or a so-so reading? A. If you have a crank shaft that is bent like this here—

Q. Would that be a hog? A. Yes, it could be a hog.

Q. I mean a sag, rather. A. Hog is this way, but sag is the other way. But if you have them in a line like this, that is what you like. By changing the load of a ship you can change this here, but if it will follow this line like here, you are in a very good shape.

Q. Do I understand you to say that—I don't understand your answer exactly, and I am sure you are explaining it the right way, and it is me, not you.

Let's address ourselves specifically to Plaintiff's Exhibit 23. Does that tell you how the main engine crank shaft was lying when that wire limit reading was taken? A. Definitely.

Q. And how was the main engine crankshaft of the [458] HELLENIC SAILOR lying when that reading was taken? A. It was lying in accordance to here. That's all I can say.

Q. Yes, but what is that? We can't get "here" on the record. A. Very good reading.

Q. Was it lying with a sag? A. Yes, this is a sag in the shaft, yes.

Q. That is a sag? A. Yes.

Q. If the reading had been over the zero line this way (indicating)— A. Well, then you have to tell me the—

Q. Just elementary with respect to wire alignment readings in general, that would have shown that the shaft was lying in a hog? A. As long as it is in one line not going zigzag.

• • • • •

[459] Q. What other conclusion do you draw from that wire alignment reading, apart from the way the shaft was lying? In other words, lying generally in a sag condition. With respect to the main bearings, if you will. A. Oh, if it was my ship, I would be happy to see a reading like this.

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The Court: This is so obvious, Mr. Kritzalis. Now he has expressed his general conclusion. He thinks it [460] is a very good reading. A dream reading. Now we don't have to have any more substantive conclusions of this man. Now, the only thing that is going to help me now is to get past this and analyze it, and I assume that an analysis would be somehow comparing this with other readings he has taken that were good, bad, or indifferent, but, you know, just to keep asking for his substantive conclusion isn't going to help me very much.

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Q. As I read Plaintiff's Exhibit 23, the No. 3 main bearing is lower than the No. 4 and the No. 2 main bearings; [461] am I right? A. That's right.

Q. And that No. 4 main bearing and the No. 2 main bearing are essentially at the same level; is that right? A. Yes; exactly.

Q. In analyzing Plaintiff's Exhibit 23, would I look as between bearings, apart from the question as to whether I would look between the straight or zero line and the main journal and thus the bearing at each of the three bearings that we are measuring? A. You mean to say should you look at—

> The Court: Is there a significance to the fact that the sag at No. 2 was 32 thousandths and the No. 3 was 42 thousandths? Does that set of circumstances have any particular significance?
>
> The Witness: It is excellent. It is good.
>
> The Court: The answer is no, it has no significance?
>
> The Witness: No, excellent.
>
> The Court: All right.

Q. If the reading at No. 3 on Plaintiff's Exhibit 23 were 22 thousandths of an inch, would there be any significance to that? Given that the readings at 4 and 2 remain the same? A. You would have a worse shaft condition than you [462] have now.

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[463] * * * * *

> The Court: The witness has marked Exhibit No. 23, which I don't think he should have done, but as

long as he has done it, let's indicate that the pencil marks are the witness' marks and I am going to put in brackets by No. 3—

Mr. Kritzalis: Could we do this on another exhibit, your Honor? Or I can substitute another clean copy.

The Court: It is not clean anymore. 022, and it is in brackets now. That is the reading based on your hypothetical; is that right?

Mr. Kritzalis: That's right.

The Court: All right.

The Witness: Here is the point now. If you take a line from here to here now, you see we have a bend in the shaft which you don't have here.

Mr. Kritzalis: In other words, if you draw a line from the zero point to the point we have marked with 22 thousandths of an inch; is that correct?

The Witness: You see how much smoother this is and this is and this is?

Mr. Kritzalis: May the record reflect that the witness is taking a pencil and putting it on the zero line to the original measurement on Plaintiff's Exhibit 23 of 042 thousandths of an inch, in other words from the zero line— [464] from the zero at No. 4 main bearing and then doing the same thing from the 042 thousandths of an inch reading to the zero line at the No. 1, or zero point on the No. 1 main bearing.

Q. Now, would you explain to the judge that point? A. This would be a much, much worse situation than this here (indicating). Because let us say you get a break in the

shaft right here which is much smaller, this way than this way; right?

The Court: I am not getting it at all, and the record is not getting it. So I don't know—

The Witness: Sometimes we get a reading that looks like this, too (indicating). This shaft can—this reading can be so high up and this here. That's bad, because if you break it, this is the shaft now lying this way, if the shaft was lying this way, it would be no good; right?

Mr. Kritzalis: Say that again.

The Court: You've got to do whatever you need to do. You see, we've got a court reporter and he's got to take it all down, Mr. Golten.

Mr. Kritzalis: That's why I wanted to pursue that line of questioning, if I may.

The Court: All right.

By Mr. Kritzalis:

Q. With respect to Plaintiff's Exhibit 23 in evidence, [465] Mr. Golten—

Mr. Kritzalis: I apologize, your Honor, if I have to go through some groundwork over again. It is a difficult concept, and I am not a marine specialist.

The Court: All right, go ahead.

Mr. Kritzalis: A diesel specialist.

Q. Looking at that photograph we have zero at No. 1 main bearing and zero at No. 5 main bearing; is that correct? A. Yes.

Q. That's our zero point. That's the point from which we measure the other three; is that correct? A. Yes.

Q. Now, looking at Plaintiff's Exhibit 23, the distance after taking into consideration the wire sag constant for the point of the distance between the No. 1 main bearing and the No. 2 main bearing, after taking that wire sag factor into consideration and doing the calculations, the distance from the wire to the top of the main journal at No. 2 is shown there— A. Yes.

Q. And that is .032 inches? A. Yes.

Q. That same figure is the distance from the wire to the top of the No. 4 main journal?

The Court: I don't think it would be the distance [466] from the wire.

Mr. Kritzalis: After taking into consideration the wire factor. In other words, if the wire were a straight line, if the wire were straight.

The Witness: No, we are taking off the sagging. It is a straight line.

The Court: Yes, but your 32 thousandths isn't the distance between the wire and the top of the journal.

The Witness: It is the distance between the perfect line between the two points.

Mr. Kritzalis: You are right, your Honor. It is the distance—

The Court: It is the difference between the top of No. 1 and the others, and you arrive at the top of No. 1 and call that zero.

Mr. Kritzalis: Correct.

Q. So that the distance that we are talking about, this 32 thousandths of an inch, would be how far down the Nos. 2 and 4 main bearings—main journals are on the bearings.

The Court: Below—

Q. Below what the No. 1 and the No. 4* would be which is the straight line. A. Exactly right.

[467] Q. And similarly the No. 3, the figure for No. 3 on Plaintiff's Exhibit 23 in evidence, of 42 thousandths of an inch would be how much lower than the Nos. 2 and 4, the No. 3 is, in its No. 3 main bearing; is that correct? A. If you lift it all up to this here, the shaft will be straight.

Q. But am I correct in my premise so far? A. Yes.

Q. What does that diagram tell us with respect to the relationship of No.—

Mr. Kritzalis: Strike that.

Q. What does Plaintiff's Exhibit 23 tell us, or should we conclude, with respect to the—

Mr. Kritzalis: Strike that.

Q. What do we call this decrease? In other words, the decrease at No. 2, No. 3 and No. 4 main bearings as reflected in Plaintiff's Exhibit 3? A. It is sagging. It is a little down, that much down below the center line.

Q. Would we call that wear-down? A. It can be wear. It can be cracking of a—if a main bearing is cracked you will find it right here now, it will go further down; right?

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* Should be "5," not "4".

Q. Right. [468] A. So it isn't always wear and tear. It could be a cracked bearing which happens quite often, then it is going down.

Q. But it is a sag, is it not? A. Yes.

* * * * *

Q. Yes. In other words, there on Plaintiff's Exhibit 23 we have two different readings. A. Yes.

Q. At No. 2 we have 32 thousandths of an inch, at No. 3 we have 42 thousandths of an inch. A. Further down.

Q. It is further down, the No. 3 is further down? A. Yes.

Q. What do we conclude from the fact that No. 2 is slightly higher and that No. 3 is slightly lower? A. The reason for it?

Q. Either the reason for it or with respect to the [469] distance, the figures. In other words, the difference between 32 thousandths and 42 thousandths. A. Yes, I understand that. But what you are aiming at, I don't understand. There is a difference between 42 and 23,* and 32.

Q. Right. Is that a good difference or a bad difference or a so-so difference? A. Very good.

Q. Why? A. Because from one bearing to another you have a distance from here to the window, and my one hair is about one thousandth thick. How is that? So you can —ten of these hairs is the whole difference between it.

Q. The difference between the No. 2 and No. 3. A. Yes. You have 23* and you have 42. That's 20 hair-thicknesses difference on that in the distance from here to the window.

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* Thus in the original.

Q. So that the difference—is it your testimony that the difference which is ten thousandths of an inch as between the No. 2 and No. 3 main bearings is— A. Is nil. Next to nothing.

Q. Is that also good? A. That is very good.

Q. Is your answer true with respect to the difference [470] between the No. 4 and the No. 3 which is also a difference of 10 thousandths of an inch? A. Exactly the same.

The Court: A hair-thickness is what, one thousandth?

The Witness: My hair is one thousandth thick.

Q. Now, let's take as a hypothesis that the No. 4—the measurement at No. 3 of 42 thousandths of an inch isn't 42 thousandths of an inch, forget it for the moment, and let's say it is 22 thousandths of an inch on that diagram. So you have 22 thousandths of an inch at No. 3. Would that not mean that the No. 3 main bearing—the No. 3 main journal, the main journal that sits in the No. 3 main bearing, is higher than either the No. 2 or the No. 4? A. That's right, yes.

Q. Would the alignment reading tell us anything with respect to what ought to be done about that condition? A. You have a worse reading by having 22 thousandths on the No. 3 than you have with the 42 thousandths.

Q. Would you want to drop that main bearing? A. No, I would rather see the two of them come up, No. 2 and No. 4 come up, if I had time for it.

Q. You would rather see the No. 2 at 32 thousandths and the No. 4 at 32 thousandths come up? A. Yes.

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[474] * * * * *

Q. Is the smooth sag preferable to a broken sag on an alignment, on a wire alignment reading? A. Absolutely.

[475] Q. Is there a smooth sag on Plaintiff's Exhibit 23? A. Yes.

Q. If there were a broken sag on Plaintiff's Exhibit 23—

Mr. Kritzalis: Strike that.

Q. If on Plaintiff's Exhibit 23 the reading at the No. 3 main bearing were 22 thousandths of an inch instead of 42 thousandths of an inch— A. You would have a worse reading.

Q. Just listen to my question. If the reading at the No. 3 were 22 thousandths of an inch as opposed to 42 thousandths of an inch, would you have a broken sag— A. Yes, it wouldn't be a smooth sag.

Q. It would not be a smooth sag? A. No.

Q. Let's assume hypothetically that you had a 22 thousandths of an inch figure at the No. 3 main bearing. Just assume that for the purpose of my question. Would Plaintiff's Exhibit 23 in evidence still show a satisfactory reading? A. Absolutely.

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[476] * * * * *

Q. I note also that on Plaintiff's Exhibit 23 the document contains the vessels' draft forward and the vessel's draft aft; is that correct? A. Yes.

Q. Does the vessel's draft have any effect on the wire alignment reading? A. Very little, if any.

Q. Does the vessel's trim, and by that I mean the difference between the draft forward and the draft aft, have

any effect on the wire alignment reading? A. Very little, if any.

Q. Let's assume that for purposes of my question that at the draft shown on Plaintiff's Exhibit 23 which shows a forward draft of 12 feet 6 inches and an aft draft of 22 feet 10 inches, the line, or the figures at the Nos. 2, 3 and [477] 4 main bearings were above rather than below the zero line. What would that show? A. It would be not a sag, it would be opposite, hogging.

Q. A hogging. Assume that with the case, to wit, a hogging shown on Plaintiff's Exhibit 23 at that draft, what conclusion—would you draw any conclusion from that? A. I would say God bless you, you sail smooth and nicely. Perfectly.

Q. In other words, both at the hog and at the sag at those figures, Plaintiff's Exhibit 23, if the figures were the same, would be— A. Excellent.

Q. —excellent.

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Cross Examination by Mr. Kennedy:

Q. Mr. Golten, did you take any of the wire alignment readings that you referred to on your direct examination? A. Did I take any—

Q. Did you take the one that is reflected in Plaintiff's [478] Exhibit 23 in evidence? A. In person?

Q. Yes. A. No.

Q. Do you know who took it? A. I couldn't say offhand, but I think it is a man we call Haugestad.

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[479] • • • • •

Q. In the course of your business do you have an occasion to learn whether the manufacturers of the various engines prescribe maximum or allowable web deflection? A. Well, I visit William Doxford & Sons probably once a year.

[480] Q. That's in England? A. In England, yes.

Q. Great Britain? A. Yes. And the last time I was there I had 20 other engineers telling them how they should shrink their crankshaft.

Q. Shrink their crankshaft? A. How they should build the crankshaft, put them together. Because every single one they put up with the five new ships we had to come and grind them with my grinding device before they could use them.

Q. What are you telling me, that each individual crankshaft is different? A. They didn't know how to build them, really. But after I told them how to build them, we haven't ground one.

Q. You told Doxford how to build their crankshaft? A. That's right.

Q. Did you tell them anything about web deflection?

The Court: When did you tell them?

The Witness: This is two years ago now.

Q. I asked you concerning whether in the course of your business you had occasion to learn whether the manufacturer publishes allowable web deflections in its engines. A. If they do, I haven't seen it.

[481] Q. You haven't seen any? A. No.

Q. Did you ever discuss allowable web deflection with Doxford? A. I certainly did.

Q. This was two years ago when you told them how to build the crankshaft? A. This could be ten years ago, five years ago. Last time, I wouldn't know if I told them last year.

Q. Why were you talking to them about web deflections? A. To help them along, not me.

Q. Did you give them an opinion as to the maximum allowable deflection in a main web, or main webs in a Doxford engine? A. I criticized their maximum.

Q. What was their maximum? A. Well, I think it was a sagging of 1½ millimeters—between 60 and 70 thousandths was the maximum they had after I had talked to them three, four times before, but before that it was much, much more.

Q. They were at the time you are referring to, they had a maximum prescribed deflection in main webs of 60 to 70 thousandths, is this of an inch? A. Yes.

[482] Q. What did you tell them with respect to these maximums? A. In my opinion, if I built it, if I was the builder of it, I would have it much less.

Q. Did you give them any figure that you suggested as a maximum? A. Yes.

Q. What was that figure?*

* * * * *

[483] The Court: More or less every year commencing when, have you talked to them?

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* At this point the trial transcript is blank for half a page. The court reporter advises that his notes are blurred and unclear.

The Witness: It is in the summertime, really.

The Court: I am asking more or less every year, how many years have these conversations been going on?

The Witness: About six, eight years. Maybe more.

The Court: Six, eight years, maybe more. And each year you criticize their tolerances; is that right?

The Witness: Yes.

The Court: And this has been going on six or eight years, maybe more?

The Witness: Yes.

Q. Mr. Golten, there has been some testimony concerning the webs that one refers to in taking a web deflection reading. Would you take any two webs and tell me where one would place the instrument used to check the deflection? A. Well, I can tell you that we never use a deflection on a Doxford.

Q. You never use a deflection on a Doxford. Why not? A. Because we have better instruments to do it with.

Q. Which is better? A. Taking the line, that's all we need, the wire.

Q. The sagging wire is better? A. Oh, yes. So we—if I was out at sea and I had [484] nothing but the deflection instrument, I would take it because it could give me some indication what is wrong, but I would never use it when I can use something better.

Q. If I were to attempt to measure the deflection in the —in two main webs of the engine that is depicted on Plaintiff's Exhibit 1-A, would I place—would I use a micrometer? Is that the instrument I would use? A. Well, we have a certain instrument with an indicator in the middle.

Q. What is it called? A. It is called a distortion instrument, or a deflection instrument.

Q. A deflection instrument, that's what I would use. Now, would I place one end here?

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[485] * * * * *

A. You place it from here, from here to here (indicating).

Q. You placed it between the webs. Now between the main webs of the No. 4 crank; is that correct? A. That's right.

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[486] * * * * *

Q. Referring to the penciled marking that the witness put on the Plaintiff's Exhibit 1-A at the No. 4 position, Mr. Golten, would you place one end of the instrument on the inside of the web closest to position B? A. Yes.

Q. And you would place the other end of the instrument again on the inside of the second web which actually forms the No. 4 crank; is that correct? A. Yes.

Q. Now, you have drawn a circle in the middle. What is that circle? A. That is the dial indicator.

Q. Something like the dial indicator we have seen on the micrometer? A. Exactly.

Q. Now, this web is in the up position, is it not? A. You have to have your crank, your connecting rod standing a little to the side. Then you put your instrument up here. Then you turn the whole engine until it comes down [487] to here almost, until it touches the same instrument. You can't make a complete turn, because the connecting rod is in the way. But almost a complete turn.

Q. And is it correct that you turn it 90 degrees, take a reading— A. No. You turn it 360 degrees if you could,

but you have to give a little leeway where you have an instrument standing here.

Q. As you turn it, do these webs tend to move with respect to one another? A. Yes.

Q. That is called the deflection? A. Yes.

Q. As you turn it, are there positions where you will make a reading? A. Oh, yes.

Q. Let's assume that the top position is—is the top position a theoretical zero? A. No, we start with the crank pin in the bottom. Close to the bottom as you can.

Q. So that in the diagram, in this diagram, referring to Plaintiff's Exhibit 1 and the fourth crank, what is the position of this crank? A. At the bottom.

[488] Q. It is at the bottom. This reading would show it 180 degrees in the bottom, that is where you drew your line? A. For me to get my instrument on it I have to turn the engine so my crank, connecting rod, gets a little on the side so I get my instrument right in the middle. Then I set my instrument on zero. And I turn it 90 degrees and take my reading. And I turn it to top and take my reading. Turn it to starboard and take my reading. And turn it back to almost the same position as before.

Q. So you take readings? A. Take readings.

Q. And these readings show the extent if any to which the web is flexing? A. Yes.

Q. Are these readings generally in thousandths of an inch? A. Hundredths of a millimeter we usually use.

Q. Hundredths of a millimeter. They are very slight that— A. About 2½ hundredths goes one thousandth.

Q. Is it important to know how these webs deflect? A. It doesn't harm.

Q. Doesn't harm? A. It doesn't harm to take this here, because—

[489] Mr. Kennedy: I move to strike as not responsive.

The Court: Motion denied. He just answered your question.

Q. Is it helpful to know how these webs are deflected? A. Not for up and down, but for sideways.

Q. Side to each other? A. No, sidewise of the ship. You get a reading with the deflection not up and down only, but you get it sidewise, too.

Q. You mean the web deflection tends to do with a sideways motion; is that what you are telling me? A. Up and down motion and sidewise motion.

Q. What does an alignment reading have to do with? A. Only up and down.

Q. Only up and down. So is it fair to say that an alignment reading will not tell you the actual condition of your webs with regard to deflection? A. It will tell me much better than the deflection will.

Q. But it will only tell you up and down, it won't tell you sideways. How do you find out about sideways? A. It isn't too important. Because it never changes from the ship is built. Sidewise.

Q. Web deflection never changes? A. Not sidewise, really. Except if a ship was hit by [490] another one and bent it, then you can find that the one bearing is a little out of line sidewise.

Q. Referring to Plaintiff's Exhibit 23, would you study the diagram and would you tell me the deflection of the webs in the No. 4 crank? A. No.

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[491] A. But I can figure out.

Q. How are you going to figure it out? A. Give me two hours—

Q. Without figuring it, tell me how you would go about figuring it out.

> The Court: I don't think that is going to get me anywhere. The fact is that they did not—there is no evidence that anybody actually did use these figures to figure out deflection. And whether it can or cannot be done, it wasn't done. Now, if it is important, the fact that it wasn't done is the critical thing. Are we going to have this fellow sit here and try to figure out mathematically a formula for calculating?
>
> Mr. Kennedy: I am not interested in the answer, I am just interested in whether, a) whether it could be done, and as your Honor points out, whether it was in fact done.
>
> The Court: There is nobody giving claims that it was done.

Q. Mr. Golten, if we heard some testimony in this case that in order to make proper web deflections we would need an instrument some eight feet long to run from the web of one crank to the web of another crank, would that testimony be correct? A. No.

[492] • • • • •

Q. You referred to a figure of 125 thousandths of an inch. Was that a deflection figure or was that an alignment figure? A. I think that was a deflection figure.

Q. Well, the figure that you referred to you think it was a deflection figure, a web deflection figure? A. Yes.

Q. Was it your testimony that this figure would—that this deflection is permissible in the operation of a crank shaft such as the type we have on the HELLENIC SAILOR? A. No. I heard this during the war years when Chester, Sun Doxford was building this, that they had taken strain gauges and figured out this here, you cannot take— [493] you cannot take this here with this instrument here when the ship is going at full load; right?

Q. You mean you can't take readings when the ship is operating. I understand that. A. But they took, with some kind of an instrument, and figured out how much the give was and I think that was the give between the webs, what we have pointed out.

Q. Well, just so I understand you, are you talking about web deflection or are you talking about crankshaft alignment? A. Deflection. The way I heard it.

Q. Deflection between the webs? A. The way I heard it.

Q. That's what you heard. A. After the war, yes.

Q. Did you hear this recently also? A. No, I can't say I have discussed it. Sun has stopped building them, so they are not interested—

Q. Do you know whether a deflection of 125 thousandths of an inch would reduce the life of a crankshaft? A. Yes, it certainly will. But this was an ordinary condition that Doxford, Sun Doxford got this here reading. At full speed.

Q. This 125 thousandths is at full speed? [494] A. That's the way I understood it.

Q. And is 125 at full speed—well, it is your testimony that 125 at full speed would reduce the life of the shaft; is that correct? A. At full speed—

> The Court: I don't know why we are fiddling around with 125 thousandths deflection at full speed. There is no evidence that there was anything like that here. There is no evidence that a deflection reading was ever taken. What are we fiddling around about?
>
> Mr. Kennedy: Your Honor, the figure 125 thousandths was first referred to by Mr. Petsis, again this witness referred to—
>
> The Court: Something he heard in a vague way. Now it is not any reason to pursue it endlessly.

Q. In describing how one goes about taking an alignment reading, you referred to times when you might have to go back into the engine. Were you referring to the intermediate tail shaft section? A. Yes.

Q. Why would you have to do this? A. To find out if the intermediate shaft are in line with the main engine shaft.

Q. Is this because you have a single driving shaft [495] as beginning with the crankshaft, the intermediate shaft and the tail shaft? Is that correct? A. Well, you have an intermediate shaft more and more of those until you reach the propeller; right? If they want us to take the alignment

to see that the whole business is in one straight line, you have to go beyond the length of the engine; right?

Q. So if I wanted—what you are saying is if I wanted to know if my drive shaft was straight, I would have to measure the drive shaft, the intermediate shaft, and the tail shaft? A. Correct.

Q. Did your company take intermediate shaft readings for Hellenic from time to time? A. We have done it, yes.

Q. You have? A. Yes.

Q. On the HELLENIC SAILOR? A. That I couldn't swear to.

* * * * *

[496] * * * * *

Q. Did your company ever take telescopic alignment readings for the HELLENIC SAILOR? A. That I couldn't say.

Q. When you said that the Sun Doxford main engine bearings were self-aligned, were you referring to the fact that they are spherical bearings? A. That's right.

The Court: He said that. Please don't use cross-examination to repeat.

Q. Getting back to web deflections and referring to Plaintiff's Exhibit 1-A in evidence, I refer you to the No. 2 crank section. Assume that there was an improper web deflection between the webs in the No. 2 main crank, do you know where the greatest stress would be imparted in the operation of that crank? A. I have no idea.

Q. You have no idea? [497] A. No.

* * * * *

Q. You referred to Plaintiff's Exhibit 23 as a dream alignment; is that correct? A. Yes.

Q. And that was because of the symmetry, if that is the correct word? A. Well, I wouldn't know what word you use for it, but very good alignment there.

Q. And Mr. Kritzalis posed to you the hypothetical that if you moved the center alignment from 42 up to 22 you suggested that the way to correct this condition was to move the bearings at 4 and at 2 up from 32? A. That's right.

Q. Well, why wouldn't you bring the reading at 3 back to the dream alignment at 042? A. You would have even a better one if you moved these two up. But to get it smooth—

Q. By "these two," you are referring to the 2 and the 4? [498] A. 2 and 4. Move them up. A little higher up there so we get the same smooth line here.

Q. Well, what's wrong with bringing it back down to 42? A. Well, this is not bad, this is a bad one, but this is a better one; right (indicating)?

Q. So that at some point the sag in spite of its symmetry is not proper; is that correct? A. Let me explain. If I was going to move this up and that up to here—

Q. You are referring now to the bearings at 4 and 2. A. I could probably have to work for days to get a smooth line like this.

Q. Referring to bringing it up so that it could complement the 22 thousandths of an inch reading at 3. A. This is a very good line to go by.

Q. Referring to the original line on the diagram; is that correct? A. Yes. But for me to get another line like this, smooth and as even as this here would take me days.

Q. Well, then, instead of playing around trying to get as good a lineup with 22 as the apex, if I may say, why not bring it down to 42? A. Well, that can be done.

[499] Q. It is better to bring it up; isn't that right? A. Yes.

Q. Because you reduce the sag; isn't that right? A. Yes.

* * * * *

[500] * * * * *

Mr. Kennedy: Would you please mark this for identification.

(Defendant's Exhibit D marked for identification.)

Q. I hand you a document which is a Xerox—

Mr. Kritzalis: Your Honor, if I may. May I see both these documents before we proceed? May I know before these documents are shown to the witness for what purpose they are being offered?

The Court: No, I don't think you can.

* * * * *

[501] * * * * *

Mr. Kennedy: It is a string gauge reading for the HELLENIC SAILOR dated February 14, 1962.

Mr. Kritzalis: Which one is that?

Mr. Kennedy: Exhibit D.

Mr. Kritzalis: What is the date of the other one?

Mr. Kennedy: Exhibit C, June 22, 1961.

Would you stipulate, make the same stipulation as to Exhibit C?

Mr. Kritzalis: Yes.

Q. Referring to the exhibit, sir, I note that—

The Court: This is Exhibit D?
Mr. Kennedy: This is Exhibit D.
The Court: All right.

Q. It appears to have been prepared by Golten Marine Company, Inc. and it is a wire gauge reading for the HELLENIC SAILOR on a Doxford engine. The ship has a draft of 23 feet forward, 6 feet aft, and 26 feet—strike that.

[502] 23 feet forward—23 feet 6 inches forward and 26 feet aft. Would you comment upon the alignment reading as shown in this document, and would you also call it a dream reading? A. Yes.

Q. Why is that? A. Because you have this smooth line.

Q. Is there any significance in the fact that the smooth line you referred to is a line in a sag position? A. It makes no difference, sag or hogging.

The Court: What are the readings?
Mr. Kennedy: The readings are 32—it is zero at 5, 32 thousandths at 4, 37 thousandths at 3, 24 thousandths at 2.
The Court: 32 thousandths, 37 thousandths, and what was the next?
The Witness: 34 thousandths.
Mr. Kennedy: Mr. Toy just whispered in my ear that I may have said "sag" before. If I did, I would like to correct the record to show that it is a hog.
The Court: May I see it?
Mr. Kennedy: Yes, sir (handing).
The Court: All right (handing).

Q. Now, sir, is it your testimony that if the readings [503] shown on Defendant's Exhibit D for identification were the same numbers but in fact reflected a sag in the ship, that this would still be a good reading? A. In all cases that is a good reading.

Q. So that what you are saying is that with a 23 foot 6 forward draft and a 26 foot aft draft, a sag of 37 thousandths of an inch at 3, 24 thousandths of an inch at 2, and 32 thousandths of an inch at 4 is satisfactory? A. Yes, absolutely.

Q. Referring now to the document marked Defendant's Exhibit C for identification, do you recognize it as a Golten Marine Company document? A. That I recognize, yes.

The Court: What are the readings?

Mr. Kennedy: The readings are zero at 5, zero at 4, 11 thousandths hog at 3, 8 thousandths hog at 2, and zero at 5. Strike that. Zero at 1. The draft at the time is 18 feet 4 inches forward, and 23 feet 6 inches aft.

Mr. Kritzalis: May I have those readings over again, please?

Mr. Kennedy: Zero at 5, zero at 4, 11 thousandths sag at 3—hog, I'm sorry. 8 thousandths hog at 2, and zero at 1.

Do you want the draft readings again?

[504] Mr. Kritzalis: No, I have them.

Q. Is this also a dream reading? A. Very good, yes.

Q. And again without reference to the draft of the ship? A. Excellent.

• • • • •

[505] • • • • •

Q. I hand you a series of documents, the first of which is marked Defendant's Exhibit E for identification, and also bears the number "1." Does this refresh your recollection as to the type of work, if any, that Golten did for the HELLENIC SAILOR in Piraeus in 19— A. Well, I see Mr. Haugestad had been there, and if it says on the bill here, believe me, it is so.

Q. Would you have sent Mr. Haugestad? A. I probably was in Japan at the time. We work up to 20 ships a day; how can I remember?

Q. Do you recognize the document which is among the group marked Defendant's Exhibit E for identification which is numbered 3, and that is a wire alignment reading dated September 17, 1962 (handing)? A. You ask me this. Yes, it says Golten Marine, and must be.

Mr. Kennedy: Mr. Kritzalis, in order to save some time I would ask for a stipulation that the alignment reading just referred to was issued in connection with the work done [506] by Golten at Piraeus in September of 1972* (handing).

• • • • •

Mr. Kritzalis: For present purposes I will stipulate that the two Golten alignment readings dated September 17, 1962 issued in connection with the work performed on the first two sheets that were marked Defendant's Exhibit E for identification. I am expressly excluding from my stipulation page 4.

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* "1972" should be "1962".

The Court: I don't know what the stipulation is. Are you stipulating that work was done on the HELLENIC SAILOR in Piraeus in September of 1962?

Mr. Kritzalis: I thought I was being asked to stipulate that the two wire alignment readings were done in connection with work performed on the invoice.

Q. Mr. Golten, I refer you to the document in the group marked Defendant's Exhibit D for identification which is numbered 4 and ask if you can identify it (handing). A. No, there is no sign of Golten Marine or anything [507] here, so I couldn't say that it is ours, but I should think it is.

Mr. Kennedy: Mr. Kritzalis, would you stipulate it was issued in connection with or after the repairs in 1962?

Mr. Kritzalis: No.

The Court: Mr. Kritzalis, Defendant's Exhibit E marked for identification, page 1, is an invoice dated October 5, 1962. Is that an invoice relating to work done on the HELLENIC SAILOR in September of that year?

Mr. Kritzalis: Yes.

The Court: All right. And that is pages 1 and 2. And page 3 is a wire gauge reading dated September 17, 1962 and you have stipulated that that reading was taken in connection with that work.

Mr. Kritzalis: Yes, sir.

The Court: All right. Now, page 4, is that one that has been stipulated about?

Mr. Kritzalis: No, that is the one I will not stipulate, your Honor.

The Court: All right. Now, page 5 is another [508] wire reading dated September 17, 1962. Do you stipulate that that was made in connection with the work?

Mr. Kritzalis: Yes, sir.

The Court: All right.

Mr. Kennedy: Your Honor, may I point out to you that the document which Mr. Kritzalis refuses to stipulate was marked for identification as Defendant's Exhibit No. 32 for identification upon the deposition of Mr. Allen.

The Court: All right. Where does that get us?

Mr. Kennedy: It was so marked at page 81, at which point I said let's mark it first. And it was marked 32.

Question: "Mr. Allen, would you tell us what this document is?"

Answer: "The upper part of the document refers to the bridge gauge readings. After completion of repairs. The lower part refers to the crank web deflections in hundreds of millimeters."

Question: "When were the repairs that you have just referred to completed?"

Answer: "I believe that was in Piraeus."

Question: "Would you check your diary, you may be able to give us a better idea."

[509] The Court: In other words, you are reading from Mr. Allen's deposition and he is talking about this page 4?

Sigurd Golten—for Plaintiff—Cross

Mr. Kennedy: This particular page:

Question: "Would you check your diary? You might be able to give us a better idea."

Answer: "What was the date there?"

Question: "September of 1962."

Answer: "The ship was in Piraeus."

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[511] • • • • •

The Court: All right. That objection is overruled and Defendant's Exhibit E is received in evidence.

(Defendant's Exhibit E received in evidence.)

Mr. Kritzalis: In toto, your Honor?

The Court: Entirely, and subject to a motion to strike, you can bring out parts of the Allen deposition that undercut the foundation—you can do that.

Mr. Kritzalis: Thank you.

Mr. Kennedy: I will also offer Defendant's Exhibits C and D in evidence at this time, your Honor.

The Court: All right, Defendant's Exhibit C and D [512] are received in evidence.

• • • • •

The Court: So far I am a little puzzled. Now you put is as Exhibit D this wire gauge reading showing a hog—

Mr. Kennedy: With a full load, or a near full load.

The Court: Well, which showed what it showed, and he says it was an excellent reading.

Mr. Kennedy: Right.

Sigurd Golten—for Plaintiff—Cross

The Court: Now, what am I supposed to get out of a continual strain of a variety of readings, some I assume will be like the October 11 reading, or that Exhibit B and others may be different. And if you've got anything where a document contains a comment on it, that something is good [513] or bad, otherwise I just don't know what we are bringing all these documents in for.

Mr. Kennedy: Your Honor, the purpose in my offering the documents is to show that for the time of its known life, that is, in this period in the sixties, the shaft generally conformed to the ship. A ship sags as well as a shaft. A heavy ship will hog and a light one will sag. One of the contentions is that the sag was too great, taking into account information known to the owner, et cetera, et cetera.

The Court: The October 11 reading was where the ship was light and there was a sag. Now, as of the time of the present record we have no reading when the ship was loaded.

Mr. Kennedy: There is a reading——

The Court: So what am I suppose to compare something with?

Mr. Kennedy: There was a reading taken at Port Sudan which showed that the ship was fairly well loaded and she still sagged and this is the reading, the second of the three readings that appear on Defendant's Exhibit A.

The Court: The small sag?

Mr. Kennedy: The sag of 25 or 22 or something like that.

[514] Mr. Kritzalis: If I may, your Honor, then I would suggest what Mr. Kennedy ought to do is address himself to that reading and ask the witness whether that was—ask him about that one reading.

The Court: Well, no, if you want to do this, it seems to me that what you have got to do is to just prepare a chart. That should all be stipulated. If it is the fact that this is a history of readings of this ship and you've got documents showing a history, well, that all can be done in a kind of chart or a tabulation and stipulated to. We don't have to take up time in court.

Mr. Kennedy: Your Honor, I will confer with my co-counsel after today's recess—

The Court: All right, why don't you do that? Have you got anything else?

Q. Mr. Golten, you referred to the placing of cargo in a vessel so as to change the vessel's draft. Might that also be expected to change the vessel's crankshaft alignment? A. Will you repeat—I didn't get your question.

(Question read.)

A. Yes.

Q. It would. And isn't it true that the degree of change would depend upon the quantity of cargo loaded? A. And it all depends on where it was placed.

[515] Q. I was about to get to that. And where it was placed. A. Yes.

Q. Referring to Plaintiff's Exhibit 23, you did say that it was a—I hate to be repetitious—a dream reading. Would

the information which this reading gives to you about the condition of the crankshaft be more meaningful if shortly thereafter you took a reading with the ship in a loaded condition? And I ask you that because when Plaintiff's Exhibit 23 was prepared, or issued, the ship was in a light position having a draft of approximately 16 feet. A. It will change the sagging.

Q. Well, I recognize that. If you loaded the ship you would change the sag? A. Yes.

Q. But what I am asking you is would you get a more meaningful idea of the actual condition of the shaft with respect to alignment if shortly after Plaintiff's Exhibit 23 was issued your company was requested to issue another reading with the ship in a loaded condition? A. My answer would be the same.

Mr. Kritzalis: Your Honor, I don't understand the question.

The Court: I do.

[516] A. My answer would be the same, otherwise I don't understand you.

Q. You don't understand either? A. But if I put cargo through the ship, the sagging would be less on this diagram—

The Court: The point is, I think—maybe I've got it wrong—but can you make a better judgment as to whether there is a problem with the crankshaft if you've got a series of readings? If you've got a reading when the vessel is light and then a reading when the vessel is full and you see whether it goes

from sag to hog, can you make a better judgment if you have a series of readings or at least two readings?

A. If I had all the readings, but this reading alone—

The Court: Please answer my question now. Can you make a better judgment on the basis of two readings than you can on one?

The Witness: I can, yes.

The Court: All right. That's the question I think he asked you.

Have you got anything else, Mr. Kennedy?

Q. You said that a ship's draft or its trim has no effect on an alignment reading? A. I did say that.

[517] Q. Well, if you— A. If any, it was a slight effect, I said.

Q. Oh, if any, it is a slight effect. A. Yes.

* * * * *

Q. I hand you a document which has been marked Plaintiff's Exhibit 25. Would you tell me whether the alignment readings reflected in that document are in the dream class (handing)? A. No, it is not.

Q. They are not? A. No.

Q. What is wrong with them? [518] A. You have an angle that I don't like, it is too sharp here.

Q. You are referring now to the angle between 5 and 3? A. This here angle here.

The Court: What? The angle between what?

The Witness: Between 5—

Q. Between 5 and what? Five and 3 on a straight line? A. This here, if it was this way, it would be still worse; right?

Q. You are asking if it were—if the reading at 4 were higher it would be still worse. A. No, it would be much nicer.

Q. I mean the number higher, lower— A. Now we have 35, it was taken up to 20; 20 it would be fine.

Q. Referring to the reading at position 4 on Plaintiff's Exhibit 25, it shows 35 thousandths of an inch; is that correct? A. Yes.

Q. And you think it should show what in order for it to be a proper reading? A. It would be excellent if it was up to 20.

> The Court: But the problem is the angle that appears at 4, that angle made by those two lines running [519] into 4; is that right?
>
> The Witness: Yes.
>
> The Court: All right. I think I have it.
>
> The Witness: But it is an acceptable deal as far as the ship is concerned.

Q. It is acceptable what? A. It is an acceptable reading when it comes to sailing a ship with safety. Not only acceptable, I would say it is good.

* * * * *

Q. Suppose I were to remove the connecting rods at No. 2, how would this reading be affected? A. To take the load off the No. 2 main—

Q. Right. A. This here will probably come up a little.

Sigurd Golten—for Plaintiff—Redirect

Q. You mean the 23 reading would probably come up a little? A. Yes.

Q. Would the 35 reading change at all? A. I doubt it. No, I don't think so.

[520] The Court: The 21— Wait a minute. What would come up a little, the 23 reading at 2? In other words, you have relieved a little pressure on 2 so it would come up but it wouldn't affect the reading at 4?

The Witness: No.

The Court: All right.

• • • • •

Redirect Examination by Mr. Kritzalis:

Q. Mr. Golten, about how often would you be called upon by Hellenic Lines to perform a wire alignment reading aboard the four Doxford ships owned by Hellenic Lines? A. I would probably say within a year between each call, if nothing else serious had happened.

Q. As to each ship? A. Yes.

Q. Would that be when the ships were at the Port of New York? A. Yes. Yes.

Q. Would that be an unusual or a unsual* practice for a [521] shipowner? A. We never have any call as often from any other shipowner as we have from Hellenic Line when it comes to crankshaft readings.

Q. Crankshaft readings? A. Yes.

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* Should be "usual" not "unsual."

William Smith—for Plaintiff—Direct

WILLIAM SMITH, called as a witness by the plaintiff, was duly sworn and testified as follows:

Direct Examination by Mr. Kritzalis:

Q. Mr. Smith, where do you reside? [522] A. Gridley Park, Pennsylvania.

Q. What is the address? A. 404 Chestnut Street.

Q. Are you presently employed? A. No, I am retired.

Q. Who was your last employer? A. Sun Shipbuilding and Drydock Company, Chester, Pennsylvania.

Q. For how many years were you employed by Sun Shipbuilding? A. 43 years.

Q. In what capacity were you employed by Sun Shipbuilding? A. I was in the capacity of engineer in charge of the engineering department, the engine building shops, and for the last 20 or more years I was manager of the engine building shops.

The engine building shops consisted of machine shop, pattern shop, and iron foundry.

Q. What was the name of the engine shop? A. The Wetherill plant, W-e-t-h-e-r-i-l-l plant.

Q. Is your testimony that for 20 years you were supervisor of that plant? A. I was manager of that plant.

[523] Q. When did you first join Sun Shipbuilding? A. 1924.

The Court: I know from what you have asked him that this man was with Sun for 43 years, he was manager of their shop for building engines for 20 years. I think very little more, if anything, has to be said about qualifications. If you could move right

away into the heart of the problem, I would appreciate it.

Mr. Kritzalis: If I may, your Honor, is your Honor suggesting that I not take this witness beyond that in terms of his personal qualifications as an expert?

The Court: I don't see any point in it. I assume a man who had that position with Sun is an expert. Let's get to the facts of the case.

Mr. Kritzalis: May I go one step before that, your Honor?

The Court: All right.

Q. Mr. Smith, when did .Sun Shipbuilding begin constructing the kind of engine commonly known as a Sun Doxford engine? A. 1924.

* * * * *

[524] * * * * *

Q. Could you bring me up through the present day and tell me what kind of marine diesel engine Sun Shipbuilding would construct in terms of size, or piston configuration? A. They were constructing the regular Doxford engine under license from Doxford in Sunderland, England. The opposed piston type. We built 600 millimeter engines, 586 millimeter bore—

The Court: How is it going to help me to know about millimeters? He built Doxford engines for Sun from 1924 on. Now let's go on to the case.

Mr. Kritzalis: This is the case, your Honor.

The Court: Yes, but not all those millimeters. Please.

Q. When did Doxford first build at 32-inch bore engine? Sun Doxford? Of the kind we have on the HELLENIC SAILOR? A. The first one that was built?

Q. Roughly. A. I would say that would be back around in the 1930's.

Q. Was the engine, the main engine of the HELLENIC SAILOR built under your supervision? A. It was.

[525] Q. Could you tell me why the design feature of spherical bearings was incorporated into the design of that main engine? A. That's in order to permit the crankshaft to flex and fluctuate.

Q. And that is the main bearing; is that correct? A. That's the main bearings, yes.

Q. Did Sun have sphericals on the connecting rod bearings? A. They do not.

Q. Was that design feature of spherical bearings initiated as of the first ship Sun Doxford built? A. The first engines that Sun built did not have spherical bearings in the connecting rod boxes, and I assume that's what you are asking.

Q. What about the main bearing? A. The main bearings were spherical.

Q. Were they spherical throughout the period that Sun Shipbuilding was constructing Doxford engines? A. We have never built a Doxford engine of any size without spherical bearings in the mains.

Q. During your years of service with Sun Shipbuilding, did you also have occasion, apart from manufacturing, to involve yourself in the operational aspects and maintenance [526] of marine diesel engines of the Doxford type? A. Extensive repairs such as major repairs, the parts always came to the engine building shop for process.

Q. Is Sun Shipbuilding and Drydock wholly owned by the Sun Oil Company? A. It is.

Q. Did the Sun Oil Company during the period of time when you were employed by Sun Shipbuilding own vessels? A. They did.

Q. Did those vessels have Sun Doxford engines in them? A. At one time the complete fleet was equipped with Sun Doxford engines.

Q. When did Sun Shipbuilding cease constructing vessels with Doxford engines? A. Sun Shipbuilding ceased constructing Doxford engines when there was no demand for them in this country.

Q. That was about when? A. 1948, maybe.

Mr. Kennedy: I didn't hear the witness.
The Witness: 1948, I would estimate.

Q. Do you recall when the HELLENIC SAILOR was constructed? A. The HELLENIC SAILOR was built as the MORMACWREN and was launched and delivered in the year 1939.

[527] Q. At that time did the manufacturer issue any publications with respect to maximum permissible hog, or maximum permissible sag of the main engine crankshaft? A. It did not.

Q. Why not? A. Because it wasn't necessary. You have a crankshaft with spherical bearings, it will take care of reasonable hog, or sag. Or misalignment probably would be the better explanation.

Q. What was the manufacturer's recommended maximum permissible hog or maximum permissible sag with respect to the main engine crankshaft of the HELLENIC SAILOR?

A. That is something that we did not express in sag or hog. We expressed in wear-down.

Q. That would be wear-down of what? A. Wear-down.

Q. Wear-down of what? A. The main bearings, which directly affects the alignment of the crankshaft.

Q. Now, expressing it in those terms, what was the manufacturer's maximum permissible wear-down of the main bearings of the HELLENIC SAILOR? A. Our recommendation so far as operation was concerned was that the maximum wear-down would be 125 thousandths, and [528] when you reached that point it was time to realign.

Q. How would that realignment take place? A. By—either by rebabbitting the boxes or connecting the main bearings that would require rebabbitting.

Q. You used the word "boxes." Is that the same as the main bearings? A. Well, I think main bearing has been more or less used in here. The term "boxes" or "bearings."

The Court: How do you spell rebabbitt?

The Witness: R-e-b-a-b-b-i-t-t.

Q. Would that be the process we heard earlier of building up the bearings with white metal? A. Yes. White metal is—in this particular case is a high tin babbitt.

Q. To your knowledge, was the deflection between center webs of the main engine crankshaft of the HELLENIC SAILOR, or crankshaft of similar size and dimensi[illegible], observed by the manufacturer? A. We have. I want to be sure that we know what we are talking about. Are we talking now about this dimension from here (indicating)? From the inside of this center web to the inside of this center web? A. That is correct.

The Court: One of the other witnesses made a line [529] over under No. 4 cylinder between the two big webs, and that is the dimension you are talking about; is that right?

The Witness: Yes, sir. The movement of the center webs.

The Court: And that's what you call deflection; is that right?

The Witness: You can call it deflection. Of course it has nothing to do, really, that does affect the deflection in the main bearings. The figure we measure, and let me emphasize, is something that we never got concerned about. The measurement that we took, this here, would fluctuate during—at different positions 125 thousandths.

Q. That is an eighth of an inch, is it not? A. That's an eighth of an inch.

Q. Could you tell me the circumstances under which this observation of deflection was observed? A. When the ship was in the wet basin and not revolving the engine under power. Revolving the engine with the turning gear.

Q. Would this be the HELLENIC SAILOR, or some other vessel of similar size— A. It would be an engine of this type.

Q. Of this type. Was the manufacturer concerned, or did the manufacturer concern itself with deflections of these [530] main engine crankshafts? A. We never were too concerned about it.

Q. Why not? A. Because we didn't think it was necessary to be concerned.

Q. Why would that be? A. Because you have spherical bearings there to take care of any fluctuation of movement.

Q. That was the design feature of the spherical bearing? A. Design feature, yes.

Q. What would you be concerned with from a manufacturing standpoint with respect to the main bearings in the way the crankshaft would sit? A. We would be concerned with the fact that the owner should respect the operating tolerances and keep within that figure on the minus side particularly.

Q. On the minus side particularly?

The Court: That's the wear-down?

The Witness: Wear-down.

Q. And how would that figure be measured? A. Mr. Golten has already explained that. It can be measured with a wire. If the ship is in the yard for repairs the way it would be measured, there would be, you would remove the main bearing caps and use the bridge gauge and take [531] readings at each main journal, and that would tell what your wear-down had been since the vessel was built. These records are always in the chief engineer's office.

Q. Now, is it your testimony that the wire alignment method that Mr. Golten has described would be used to measure the wear-down? A. No, depending on the reasons. If the ship is just in the yard for repairs, as I say, we have facilities where we can remove the main bearing caps, then take readings with the bridge gauge which straddles the opening for the cap, and you measure down to the top of the journal and go down from there.

Q. Apart from the bridge gauge readings, though, addressing ourselves solely to the methods described by Mr. Golten, would one of the methods for measuring wear-down be the wire alignment method? A. It would be. It has been used in the shipyard. Only when we can't get at it some more easier and more accurate method.

Q. What is more accurate than a wire alignment reading? A. Just what I described.

Q. The bridge gauge? A. The bridge gauge.

[532] Q. Is that bridge gauge—

The Court: The bridge gauge?

The Witness: Bridge gauge, yes. B-r-i-d-g-e g-a-u-g-e, or g-u-a-g-e, however you spell it.

Q. Is that something provided by the manufacturer with a new vessel? A. That is provided by the engine builder when the ship is delivered.

Q. Putting aside for the moment the bridge gauge, what other methods besides wire alignment would one use to measure wear-down? A. We wouldn't use any other method other than the wire method.

The Court: I'm sorry, the bridge gauge method, is that something that can be used, and that equipment is with the ship; is that right?

The Witness: Yes, sir.

The Court: And you would use it when, when the ship was—

The Witness: You could only use it when the main bearing caps were removed. That's these right here (indicating).

The Court: And you would do that in drydock; is that right?

[533] The Witness: In wet basin.

The Court: In wet basin?

The Witness: Yes, sir.

The Court: So you wouldn't do it at a normal port of call or—

The Witness: No, it is not necessary.

The Court: What is a wet basin?

The Witness: Wet basin is where you would—you can either call it a wet basin, some people call it an outfitting basin. If you are building a new ship, for instance, you would take it to the outfitting basin or wet basin for completion.

The Court: All right.

The Witness: It is not necessary to have a ship on the drydock to calibrate the crankshaft. It is not good to have it under drydock.

The Court: Now, wear-down.

The Witness: Wear-down creates deflection.

The Court: All right. But the readings Mr. Golten described, well, you heard that testimony; is that right?

The Witness: Yes. Yes, sir.

The Court: And you remember he described taking the No. 1 and No. 5 at zero?

The Witness: Yes.

[534] The Court: Now, I would think wear-down would be something different, because you might have wear-down on No. 1 and on No. 5, wouldn't you?

The Witness: Yes, but you—if you take all of these caps off, then you take wear-down at each station.

The Court: Yes. Now—

The Witness: In this particular method here you are measuring direct, where with the wire method your wire, really, if I can use the terminology, is a datum point.

The Court: Right. The point I'm trying to get at is the wire gauge readings as I understand it are intended to see if No. 2 and No. 3 and No. 4 journals are lower than the two end ones. Is that right?

The Witness: Yes, sir.

The Court: Now, I would think on the wear-down you would be interested in something else. Namely, you would be interested in whether all five were worn down, and that would include No. 1 and No. 5. Am I not right?

The Witness: That's right.

The Court: Now, how do you—

The Witness: But you can establish, when you take all your readings, then you can establish the amount of wear-down, which is deflection in the shaft.

The Court: All right. But how do you measure [535] wear-down on No. 1?

The Witness: The same method. Take the cap off and measure it.

The Court: Measure it with the wire gauge?

The Witness: No. You could measure it with the bridge gauge.

The Court: Well, how do you measure wear-down on No. 1 with the wire gauge?

The Witness: The wire gauge is a datum point. If you want to use the wire gauge of course then you've got to move the engine to a variable position so you can string your wire through. Then you remove the plugs on the top of the bearing caps so that it permits you to stretch your wire above them. Then you measure down through that hole to the same journal as you would if you were using a bridge gauge, except, I get what you are thinking about. Except that with a wire gauge, you must establish two points as zero, so you choose the fore and aft bearings and establish that as zero with your gauge to get the contrast of the other bearings.

The Court: I thought wear-down you were interested in something a little different than just comparing the inside bearings with the two outside. You are interested in knowing also whether the two outside ones are worn down, aren't you?

[536] Or are you?

The Witness: Yes.

The Court: All right. Now, is there some point that you fix as the—look, you've got your wire—

The Witness: Yes.

The Court: And you measure it down, the distance down to the top of the No. 1 journal; is that right? And for instance what kind of a reading might that be?

The Witness: Well, you are strictly getting a deflection reading there.

The Court: Well, I guess I am confusing it more than I am clarifying it.

The Witness: You are still getting a deflection reading and if you've got varying deflection readings, then you could assume that where you have plus readings over the others that that would be almost a wear-down in these different locations.

The Court: All right.

By Mr. Kritzalis:

Q. Getting back, Mr. Smith, to your figure of 125 thousandths of an inch— A. We are talking about wear-down now, or are we talking about fluctuation between the—

Q. Well, so that we can get it straight once and for [537] all, is it correct that you—that the figure of 125 thousandths is the observation of the deflection between the center webs— A. It has no relation with the other.

Q. Has no relation with the other figure of 125 thousandths of an inch which is the manufacturer's recommended wear-down? A. Yes.

Q. In addressing ourselves specifically to the manufacturer's recommended maximum of wear-down of the bearings of 125 thousandths of an inch, and relating that to the wire alignment readings, where would that figure of 125 thousandths be located with respect to a vessel that has five main bearings before the manufacturer would recommend that something be done? A. It could be located in the center bearing. However, if you found wear-down in any one of these bearings to that extent, then you would rebabbitt to bring it up to where it belongs.

Q. When the manufacturer constructed the ship, what alignment did the manufacturer strive for? A. When the ship was constructed the engine was built in the shop where everything is open and accessible. There are no moving parts in the location. So there is no [538] interference. You place your bedplate on the floor with the finished bearings in them. You string your wire through the main bearings, and then jack your bedplate into alignment so that you have that alignment there and then. This is in the building-up of the engine. Then you would put your crankshaft in and roll it if necessary to take readings.

Q. And what alignment, what readings would the manufacturer strive for of the crankshaft sitting in the bearings? A. In that condition without it revolving, naturally you would have full bearings and you would get readings that would be within a few thousandths of a true line.

Q. When the engine is taken off land and installed in the vessel, or would have been taken off land and installed in the vessel, would the readings have been the same? A. When it is in the ship, then they chock it—with the screw jacks, or screw jack bolts in the bed you would chock your bedplate up again to the datum marks that were placed on there by the machine shop's assembly unit. And then still string your wire and check to be sure your bearings were in line. Then you proceed with your other assemblies, columns and top guide, exhaust belt. And on here, of course, these connecting rods have got an entablature that's on there with a cross-head that guides them up and down.

Q. During the course of the vessel's operation—

[539] The Court: Did he answer? I thought you asked him when this was put onto the ship, what did the manufacturer strive for in terms of tolerance. Did you ask him that?

Mr. Kritzalis: I did.

The Court: Just restrict yourself to Mr. Kritzalis' questions, and I think he asked you when the manufacturer put this mechanism on the ship, within what tolerances did they try to get the crankshaft.

The Witness: I would say probably within four or five thousandths.

The Court: Of true?

The Witness: Of true. That's right.

Q. Would that be a hog or a sag? A. Well, it probably would be a sag.

Q. Would this be when the vessel would be in a light condition? A. The vessel would be light.

Q. Would the draft of a vessel matter in terms of the readings taken of the main engine crankshaft on the HELLENIC SAILOR when the vessel was built?

The Witness: You want me to answer this yes or no, I guess.

The Court: Just to save us time and you time, just as briefly as you can, of course.

[540] A. No.

Q. Why not? A. Because in this particular type of vessel our experience is that there is no increase or decrease in deflection with variance in ballast. Is that what you are asking me?

Q. That's what I'm asking you. And I apologize if I try and differentiate between the words "deflection" and another word that has been used, which is either "alignment" or "wear-down."

Is it correct to say that you, from the manufacturer standpoint refer to either the sag or the hog in the crankshaft as "deflection"? A. I would say that with this particular design of crankshaft, the sag probably is better.

Q. Sag. And is it your testimony that the draft wouldn't matter? In other words, with respect to the sag? A. That is our experience.

Q. That is your experience. A. With this type of ship. Now, I am not talking about ships in general; with this particular ship.

Q. What kind of a ship was the HELLENIC SAILOR? A. She was a freighter, or a cargo carrier, whatever you call it.

[541] Q. Do you recall what type? A. No.

The Court: Well, we have had some testimony that when the vessel goes from light to full you expect to go from a sag to a hog; is that correct?

The Witness: Your Honor, I am only relating the information that came to us from our hull scientific department. In this particular case here, as I repeat again, there is neither increased nor decreased deflection with variance in hog. I can go further—

The Court: With variance in—

The Witness: Variance in—

The Court: In draft.

The Witness: —in draft. Now, I can go further with the explanation this far, to say that the scientific

department claims that the ratio of depth to length of hull is such, as a matter of fact to quote it, 10.3 eighths, is such that it makes a very stiff hull girder.

* * * * *

[545] * * * * *

The Court: I wonder if I could—Mr. Smith, you heard Mr. Golten's testimony?

The Witness: Yes, sir.

The Court: My memory is that Mr. Golten was talking about the wire gauge reading, and do you recall, was that for purposes of—well, it was to measure what, alignment?

The Witness: It was to measure the amount of deflection in the alignment.

The Court: All right. In other words, the deflection from the perfect.

The Witness: From the zero line.

The Court: And you are using the zero line, zero is the—

The Witness: The extreme fore and aft bearing.

The Court: Is 1 and 5 bearings?

The Witness: Yes.

[546] The Court: Now, I am not clear about what wear-down is. You gave us yesterday tolerances for wear-down that your company was using back in 1939. Do you remember that?

The Witness: Yes.

The Court: And you said that the maximum permissible wear-down that you were using at that time was 125 thousandths; is that right?

The Witness: That's right, your Honor.

The Court: All right. Now, I am not clear about what wear-down is, whether it is different or the same from what you call alignment deflection. Am I using the right term, alignment—

The Witness: Yes, sir.

The Court: All right. Well, we will use that.

Now, is it the same as alignment deflection or is it different from alignment deflection?

The Witness: I believe, your Honor, the answer to that would be that wear-down creates deflection. Otherwise, wear on the bottom half of the bearing increases the bore and lets the shaft drop.

The Court: And if, say, on No. 2 the wear-down was 42 thousandths, the alignment deflection at that point would be the same, wouldn't it?

The Witness: It would be, yes. Either that or [547] due to the flexibility of the Doxford crankshaft it might be that it has been on an angle due to the use of the spherical bearing, it could throw it down.

The Court: All right. In other words, there are other causes of alignment deflection besides wear-down; is that right?

The Witness: Yes, sir.

The Court: So that the—

The Witness: The nature of the flexibility of the crankshaft.

The Court: Wear-down is one cause of alignment deflection. And another case might be the spherical bearing, that action?

The Witness: Flexibility of the shaft.

The Court: Flexibility.

Now, tell me again how you measure wear-down.

The Witness: If we are specifically measuring wear-down, it can be done in two methods, depending on where you are or what you are doing. You measure it of course by taking a reading with the feeler gauge on the top half of the bearing which will let you know how much it has dropped.

The Court: What is a feeler gauge?

The Witness: A feeler gauge is a regular gauge that is graduated in thousandths.

[548] The Court: That's right, we have heard of that before. And you could do that—well, how would you do it on No. 1, for instance?

The Witness: Under the cap.

The Court: Under the cap. And so obviously you might have wear-down on one—on all five bearings?

The Witness: You could have wear-down on all five or you could have wear-down on any particular bearing.

The Court: How else besides the feeler gauge could you measure wear-down?

The Witness: The other expensive way to do it of course is to use the bridge gauge.

The Court: Would you explain again how the bridge gauge works? Let's just take No. 1, how would you use the bridge gauge?

The Witness: In order to use the bridge gauge, your Honor, the cap has to be removed.

The Court: And that's—

The Witness: Then the bridge gauge sits on the seating which has already been machined in a straight line for all bearings for the caps.

The Court: What on that drawing—can you point out what has to be removed to use the bridge gauge?

The Witness: The cap (indicating).

[549] The Court: And that is that kind of—

The Witness: It is the retaining agent for the spherical bearing.

The Court: It is that sort of H-shaped thing?

The Witness: Yes, right on top. It retains the spherical bearing.

The Court: And that is called the cap?

The Witness: That's the bearing cap, yes.

The Court: And we have called it the strongback. And that gets—

Mr. Kennedy: Did Mr. Petsis call it the strongback?

The Court: And that gets right down to the bearing; is that right?

The Witness: Yes, sir.

The Court: All right. Now, you have removed the cap, or the strongback, what do you do with the bridge gauge after that?

The Witness: As I say, this cap here (indicating) on both sides sits on a machined surface which has been machined the whole length of the bedplate at one time. So that is your datum point.

The Court: Say that again.

The Witness: The seating for the cap underneath where the bolts go through, you come down on a level

[550] machined surface.

The Court: Yes.

The Witness: The bridge gauge sits on that surface, and then you measure down to the top of the journal and take your reading. Now then, in order to compare readings satisfactorily, you should have the original readings that went with the ship.

The Court: Right, but I am still not clear, and I guess I wasn't listening, apparently. With the bridge gauge, what is it you are measuring? The distance from what to what?

The Witness: You are measuring the distance that the journal has dropped into the bearing. Otherwise telling you how much the babbitt has worn on the bottom.

The Court: Now, what are you actually physically measuring, from what point to what point?

The Witness: You have a micrometer in the end of the bridge gauge and you are measuring from this datum point where your caps are seated to the journal.

The Court: All right, I've got you.

In other words, you measure from a datum point and that datum point is a point where the caps are—

The Witness: Is the seat for the caps.

The Court: Is the seat for the caps.

The Witness: That's right.

[551] The Court: And you measure from that datum point down to the top of the journal?

The Witness: To the top of the journal, yes, sir.

The Court: Then you would of course want to compare that with some other reading—

The Witness: With the original reading that was taken when the ship was delivered.

The Court: Let's suppose that upon comparison you found that that difference, in other words the difference of the measure today with the measure at the original reading was, let's say, 25 thousandths, let's assume that.

The Witness: Yes, sir.

The Court: All right. Then that would be a wear-down of 25 thousandths.

The Witness: That is correct. 025.

The Court: I've got this problem, and maybe this is the best way to approach it. Let's go back to our 125 thousandths. Allowable.

The Witness: Maximum allowable.

The Court: All right. Maximum allowable.

Let's just take that for purposes of argument now, and let's go to another type of measurement, a wire gauge reading. Now, the wire gauge reading, your datum point there is the top of the journal No. 1, and you say that's zero, [552] don't you?

The Witness: Zero, yes.

The Court: And the top of 5.

The Witness: We call that zero.

The Court: You call that zero.

The Witness: Yes, sir.

The Court: Now, let's suppose you come over to—you are doing a wire gauge reading and you come

over to bearing No. 3 and you find an alignment reading of 042. Are you with me?

The Witness: Yes, sir.

The Court: That means the difference between the top of the No. 1 bearing—

The Witness: Fore and aft, yes.

The Court: And that zero point, and the top of No. 3 bearing is 042. Right?

The Witness: Yes.

The Court: But let's suppose that the No. 1 bearing has a wear-down of 25 thousandths. Are you with me?

The Witness: Yes, sir.

The Court: I guess you wouldn't, but let me ask you, would you measure the wear-down of No. 3 bearing by adding 042 and 025? I mean, you know what the figures are that I'm referring to.

[553] The Witness: I know what they are.

The Court: In other words, the wear-down on No. 1 is 25, assuming.

The Witness: Yes.

The Court: And the difference between the point where the 025 is taken and the top of the No. 3 bearing is another 025; right?

The Witness: Yes.

The Court: Now, do you measure the wear-down in No. 3 by adding the two figures, or do you not?

The Witness: I think maybe probably yesterday, and it might have been my fault, that the confusion may be in our minds that I used the term "wear-

down," which is the amount of babbitt worn out of the bottom of the bearing.

The Court: Yes, I see.

The Witness: Whereas when you are using the wire for measuring, you are measuring only deflection in the shaft.

The Court: Right.

The Witness: And I think that is where we are getting our terminology mixed up. One case I was measuring wear-down in the bearings to see if it needed replacement. In the other case, we are measuring actual deflection in the shaft without taking into consideration wear-down of any amount.

[554] The Court: I think I understand you. So when you are talking about wear-down—

The Witness: I think maybe we should eliminate the talking about wear-down and stick strictly to deflection.

The Court: Well, I have to know, the 125 thousandths you were speaking of was a wear-down figure; is that right?

The Witness: Basically, yes, sir.

The Court: All right. And you can't really equate wear-down and alignment deflection, can you?

The Witness: Well, when the shaft has a maximum deflection of 125 thousandths, then that is an indication that it is time to raise the bearings in proper order by melting out the old babbitt, rebabbitting, remachining to bring the shaft up closer to a zero-zero reading, which, on a Doxford crankshaft is not possible.

The Court: All right. Now let's be clear. The 125 thousandths, do you now mean that we shouldn't be talking of wear-down in connection with 125 thousandths? I am not putting it well.

Do you now mean that—

The Witness: We can say that when you get a deflection reading of 125 thousandths, it is time to stop and realign the engine. You are getting to a danger point.

The Court: And a deflection reading, meaning the [555] wire gauge reading—

The Witness: Wire gauge.

The Court: —starting from zero at No. 1 and so forth—

The Witness: Yes. And if you set the fore and aft bearings arbitrarily as the datum point to reflect the deflection of the shaft.

The Court: All right. Well, is this what the Sun Shipbuilding Company issued as its instructions back in 1939?

The Witness: Back in '39, the maximum was set at that time by the chief engineer, Mr. McConnikey, of 125 thousandths.

The Court: I want to be very clear, though, Mr. Smith, on what that 125 thousandths represents, and let's start here: Were there any written instructions?

The Witness: I have never seen any, no, sir.

The Court: Well, who—

The Witness: They were verbal instructions.

The Court: Verbal instructions given by whom?

The Witness: The chief engineer.

The Court: That was who?

The Witness: Mr. Gordon McConnickey, now deceased.

The Court: Did you discuss this with Mr. McConnickey?

The Witness: That was issued just as a general [556] statement. And particularly for the benefit of repair construction groups, not new manufacturing.

The Court: In other words, for the benefit of repair if they found the alignment reading, the maximum deflection 125—

The Witness: It was time to realign the engine.

The Court: It was time to realign.

The Witness: The engine.

The Court: And this was an oral understanding, if you want to put it that way, in your—

The Witness: It was more or less understood by people involved in the area of machining requirements.

The Court: But you don't recall any written instructions?

The Witness: No, sir. I have never seen any written instructions to that effect.

The Court: All right, go ahead, Mr. Kritzalis.

Q. Mr. Smith, was that maximum of 125 thousands deflection the manufacturer's maximum over the years, aside from the year of construction? A. Aside from what?

Q. The year of construction. [557] A. I would say that that was the general instructions for this particular size engine.

Q. Would that be either a deflection above or below the zero line? A. It can happen above due to the nature of the shaft, but I would say that it more or less normally is sag.

Q. Would that be regardless of the draft of the vessel? A. We believe so. And I am only talking about this particular vessel.

Q. I understand.

The judge mentioned to you, or you testified yesterday with respect to the word "bridge gauge." Isn't that an instrument? A. That is an instrument that is generally furnished with a new ship.

Q. Furnished with a new ship? A. Yes.

Q. In other words, we can assume that in 1939 a bridge gauge was furnished with the MORMACWREN? A. There would be one and should have been one in the engineer's office.

Q. And that bridge gauge would have had the original readings— A. Original readings.

[558] Q. Stamped right on the instrument? A. Yes. A bridge gauge is not a very elaborate affair. It is fabricated from steel plate with a boss in the middle where you insert the micrometer.

Q. Isn't it essentially a triangular principle? A. Theoretically.

Q. Each leg— A. Your three point contact, if that's what you mean.

Q. That's what I mean. Which method of measuring shaft deflection did Sun Shipbuilding employ in the course of either manufacture or repair of main engine crank shafts? A. As I just indicated while speaking to his Honor

a minute ago, when we were taking readings, specifically to measure deflection, we used the same wire alignment procedure as was explained by Mr. Golten as of yesterday. That was exclusively for reflection* readings.

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[559] * * * * *

Q. Under normal operation conditions, when the main engine is in operation, would one expect the main engine crankshaft to be subjected to stresses? A. I would say yes.

Q. If the—

The Court: What was the last question?

(Record read.)

Q. If over an extended period of time wire alignment readings showed a deflection below the zero line but still within the manufacturer's maximum permissible deflection, would the shaft be subjected to, while in operation, subjected to extraordinary stresses? A. I do not believe so.

Q. If over an extended period of time the wire alignment readings at the time taken showed a deflection above the zero line but still within the manufacturer's permissible maximum—maximum permissible deflection of 125 thoustandths of an inch, would one expect extraordinary stresses exerted in the crankshaft? [560] A. With this particular type of crankshaft, if it is kept within the operational tolerances I wouldn't feel concerned.

The Court: What do you mean by "operational tolerances"?

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* Should be "deflection" not "reflection".

The Witness: Maximum.
The Court: The 125 thousandths?
The Witness: Yes, your Honor.

Q. Now, if the stresses being exerted on the crankshaft began approaching the other-than-ordinary category, how would one normally, in your experience, expect that to be manifested? A. If you are getting to excessive deflections, or getting even down to maximum deflections, then during your regular inspections before and after extended voyages you would start looking for heated bearings or possible babbitt extrusion.

Q. Would either of those symptoms be obvious? A. It would be visible at time of inspection, and by feel.

Q. Might they also be reflected in the temperature of the lube oil? A. That is possible.

Q. And if one were to examine during the course of [561] an internal inspection of the main engine the white metal of the main bearings, would the stresses other than ordinary stresses exerted on a crankshaft be visibly obvious? A. Would you repeat that, please?

(Question read.)

A. You cannot visually inspect the white metal while the bearing is closed.

Q. If you were to open the bearing? A. If you open the bearing you could find whether it was scaling or fracturing.

Q. By "scaling," you mean flaking? A. Yes. The only visible outside measurement would be, or indication, would be just as I said, extrusion of babbitt, or babbitt deposit coming from the bearing into the oil.

Q. Would that deposit also be caught by the oil filter? A. Yes, it would be.

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Q. Was it your testimony yesterday that the main engine crankshaft of the HELLENIC SAILOR which was constructed as I understand your testimony as the MORMACWREN, that the main engine crankshaft was constructed under your supervision? A. I would answer that this way: that every Doxford [562] crankshaft that was built by Sun Shipbuilding Company, the sequence of procedures and the direction for manufacture and the supervision of construction were supervised by me or came under my direction, and that would amount to around 32 crankshafts in total of this particular type of engine.

Q. And that would be the 32-inch bore? A. And 23 of those would be duplicates of this particular crankshaft, either in four or five cylinder units. And regardless of whether it is in a four-cylinder unit or a five-cylinder unit, a crankshaft is built in individual cylinder units, so that regardless of the number of cyli[illegible] 32-inch crankshaft unit is alike for all.

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[569] • • • • •

Q. I show you Plaintiff's Exhibit 23, Mr. Smith, and I ask you whether the figures shown on that reading are in your opinion within the manufacturer's permissible— A. Can I ask what all this triangulation is on here?

Q. I am referring you not to the penciled notations which were placed there during the course of Mr. Golten's examination, but rather the figures appearing on the printed

form. In other words, the figures 32 thousandths, 42 thousandths, and 32 thousandths.

The Court: If you are just asked about 32 thousandths [570] is less than 125 thousandths, I really can tell that.

A. I would say that this is within operational tolerances.

Q. Thank you, Mr. Smith. A. I think, however, if I can make a further expression, that generally speaking throughout the years on this type of chart the lines given in the chart are blown so much out of real dimension that sometimes—

Mr. Kennedy: Objected to as not responsive.
The Court: Overruled.
Go ahead.

A. —that at times it gives an optical disillusion as to the alignment of the crankshaft. They are so very much exaggerated. I notice that there is 42 thousandths and 32 thousandths particularly, and I don't have—however, I think when you look at a thing like this and recognize that that is 35 thousandths, you will get a better idea of how much 32 thousandths is below this datum line. This is 40 thousandths (indicating). This is one-eighth. And I think that gives a better optical idea of what these dimensions really are rather than the exaggerated lines that are shown up in practically all of these deflection charts.

Q. Do you know how much the entire shaft weighs, including the four sections? [571] A. Including what?

Q. All four sections. A. I would say approximately in the neighborhood of probably 130, 140 tons.

The Court: Let the record show that the witness was displaying certain plates of these dimensions.

Mr. Kritzalis: Could we have these marked for indentification, your Honor?

The Court: All right.

(Plaintiff's Exhibit 30 marked for identification.)

Q. Have you, in the course of your experience, Mr. Smith, previously encountered the work of the firm of Golten Marine, Inc.? A. Many times.

Q. Over how long a period of time? A. I would say the last 20 years.

Q. Have you formed an impression over that period of time as to the abilities of Golten Marine, Inc.? A. I believe their ability is excellent.

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[573] * * * * *

Q. Now, after construction and during the normal operating life of a vessel is it proper procedure to change the alignment of the main engine crankshaft by moving chocks or by tightening or loosening bed bolts? A. No, sir.

The Court: What was the question?

(Record read.)

A. The alignment of the crankshaft is amply taken care of by the spherical bearings on the main journal. That is their purpose.

Q. During the normal operating life of a vessel is it normal operating procedure with respect to maintenance of the vessel, the vessel's main engine, to take alignment readings of the bedplate? A. I would say not.

Q. Why not? A. Again because the spherical bearings are there for the purpose of taking care of any misalignment that might occur during the time the engine is in operation.

Mr. Kritzalis: I have no further questions of this witness, your Honor.

The Court: Let me return for just a minute, Mr. [574] Smith, to where I was at the beginning of the morning.

The measurements that you would take with the bridge gauge—

The Witness: Are for wear-down.

The Court: Are for wear down strictly?

The Witness: Strictly.

The Court: They don't measure alignment deflection?

The Witness: They are not made for that purpose.

The Court: All right. Now, you are saying that the 125 thousandths figure that was used in your company related to alignment deflection?

The Witness: Yes, that error would create deflection.

The Court: No, I am wondering, did the 125 thousandths figure relate to alignment deflection or to wear-down?

The Witness: Basically it would relate directly to wear-down and would create deflection.

The Court: Let me see if I can make this clear.

I want to know what kind of instruments you would be using, what kind of an instrument, bridge gauge or wire gauge, to measure the thing that you are talking about in the 125 thousandths.

The Witness: Okay. You can either use the bridge gauge for measuring the wear-down or if you did not want to [575] take the engine apart you can pretty nearly get it with a feeler between the top cap and the top of the journal.

The Court: So you either use the bridge gauge or the feeler?

The Witness: Or the feeler. That would now indicate to you or to whoever is doing it whether they are getting any wear-down or not unless there is other evidence such as I said of extrusion of babbitt, and so forth.

The Court: And as you said, the feeler gauge or the bridge gauge, either one would measure wear-down?

The Witness: Yes, sir.

The Court: And in order to—

The Witness: The wire gauge definitely measures deflection.

The Court: So in order to measure the thing that they were talking about in connection with the 125 thousandths you would either use the bridge gauge or the feeler gauge?

The Witness: That's right.

The Court: And then you could—

The Witness: From that you could determine wear-down.

The Court: —you could determine alignment deflection, could you not?

The Witness: Yes, you could plot a curve.

[576] All right. Thank you.

Mr. Kritzalis: May I ask the witness one question, your Honor?

The Court: Yes.

Q. Would your figure of 125 thousandths be also the maximum figure on the wire alignment reading? A. The 125 thousandths which we refer to wear-down as the judge indicated this morning in order to determine the real actual wear-down, and I don't believe there is any operator, of course, who would ever attempt to let his engine get that way, though in my experience—and I won't care to say what company—I have witnessed readings taken from Doxford engines that have exceeded our recommended tolerances to the extent that it went to 175 thousandths wear-down with no crank problem.

Q. If you were addressing— A. We did not recommend that.

Q. When you mentioned the figures 125 thousandths or 175 thousandths of an inch, would you relate that to Plaintiff's Exhibit 23? A. This is it here (indicating)?

Q. Yes. A. The only thing—I would relate it to it—

The Court: You would or would not?

[577] The Witness: I would.

A. But the thing that impresses me when I look at this is that it is within operational tolerances.

Q. In other words, within 125 thousandths of an inch? A. Yes.

Q. Now, if on that diagram, Plaintiff's Exhibit 23, the maximum figure of any of the three figures were 125 thousandths, would we then be at your maximum— A. It would probably be beyond—

Q. —permissible deflection? A. You could possibly be beyond the maximum tolerances.

Mr. Kritzalis: Thank you. I have no further questions.

The Court: Well, you didn't help me a bit, Mr. Kritzalis, because I can read figures. Now, let's suppose, Mr. Smith, and this is the point I was getting at earlier and it really concerns me.

Let's suppose that the wear-down at No. 1 bearing if you had measured it with the feeler gauge, or the bridge gauge, let's suppose that wear-down on October 11, 1967 was let's say 75 thousandths of an inch, just for purposes of discussion. Now, then if the deflection was down to No. 3 was another 42 thousandths, you might have a total wear-down at No. 3 of 75 plus 42, might you not?

[578] The Witness: Except what might have been alleviated by the presence of the spherical bearing.

The Court: Right. And the only way to tell that is to actually go through with the bridge gauge or the feeler gauge and measure each bearing, is it not?

The Witness: You are talking now, and I can understand what you are thinking. You are thinking

that when you take this at zero-zero, that there is a compensating factor.

The Court: I am just saying that that does not measure wear-down. They are two different things, aren't they?

The Witness: It does not.

The Court: All right. And to measure alignment deflection in this way really doesn't measure wear-down, does it?

The Witness: No, sir.

Cross Examination by Mr. Kennedy:

[579] • • • • •

Q. You said that in 1939 you did not issue maximum sag or hog readings. A. Sag and hog readings in that period are not readily available for this particular type ship in 1939, and as I understand it, there was no requirement for draft marks on the side of the hull in that period. I am only relating to you now information which was transmitted to me through hull scientific, or Naval architecture.

Q. What else did hull scientific and naval architecture tell you about the HELLENIC SAILOR'S Doxford Engine? A. They couldn't tell me anything about the Doxford engine because a naval architect is not familiar with Doxford [580] engines.

Q. Was the sag and hog you were referring to sag and hog of the ship or of the crankshaft? A. Well, the crankshaft of course does sag, according to hull scientific. Again, I said yesterday that the small ratio between depth and length is such that you have a very stiff hull girder. This engine, of course, is located at the widest part of the ship in the stiffest area, and theoretically that is why the

difference in draft does not seriously transmit itself to crankshaft deflection.

Q. You used the word "seriously." Would you expand upon that? Does it have any effect at all upon the crankshaft's alignment? A. Hull scientific says that it is too spotty to have any real effect on the crankshaft—

Q. Do you have any personal knowledge as to whether it does or it doesn't? A. I am not a hull man. I can only relate to you the information that was passed to me during these days.

Q. Did there ever come a time when Sun Doxford issued regulations or charts or the like concerned with maximum crankshaft deflection in Sun Doxford engines? A. I do not believe so. If they did, I have never seen it. Actually issued by the builder, you mean?

[581] Q. That's right. A. I have never seen it.

Q. If they did, would you be expected to know about them? A. I would.

Q. Did Sun Doxford ever issue regulations or diagrams or writings of any kind having to do with recommended or allowable web deflections? A. Not to my knowledge. The only thing that I ever have seen that went with the engines was really basically a catalog for ordering spare parts.

Q. If they did issue such a document or such documents, would you be expected to know something about it? A. I could and I couldn't. It wouldn't be an absolute necessity.

Q. Is crank web deflection in some way related to crank alignment? A. We find in practice that as the engine is operating, particularly in center webs, that you do get a deflection—now, this is between the webs and I don't think we should get the deflection between the webs. I'm so afraid

we'll get mixed up with wear-down. The deflection between the webs, which is the movement of the webs did—

Q. Those are the two big pieces—

[582] The Court: Wait. Let him finish.

Mr. Kennedy: I'm sorry.

A. They are the center webs, which is the location where your lower connecting rod is connected to. This is a center web and this is a center web (indicating). This is a center web and this is a center web.

The Court: Pointing to the large webs right underneath No. 2 cylinder; is that right?

The Witness: Yes. This is a center web, this is a center web (indicating). This is a side pin web and journal (indicating). This, on this side, is a side pin and web (indicating).

The Court: All right.

The Witness: And you had the drawing yesterday which was issued by my office, and you will see my signature on it which I think clearly depicts much clearer than our sketch here--and I am not being critical—the exact components that are—

The Court: I recall. All right.

A. This measurement of 125 thousandths was only for our own information to give us an idea of how much the shaft worked when it is in operation.

Q. When you say "how much the shaft worked when it is in operation," do you have in mind also how much the

webs [583] deflected in operation? A. The only thing that I am familiar with is that they fluctuate.

Q. You know they do move. A. To the extent of 125 thousandths.

Q. The webs do? A. Yes, they fluctuate like this. The center web (indicating).

Q. This is while— A. We actually measured that.

Q. This is while the engine is moving? A. While it is moving, yes. Now, let me—

Q. Excuse me. Getting back to my question, I don't believe I got an answer. I asked you if alignment, crankshaft alignment readings, were in any way related to crank web deflections. A. No, sir.

Q. They have nothing to do with one another? A. I mean we have never related it that way.

Q. You have never related it. A. "We."

Q. Meaning the company, the Sun Shipbuilding Company? A. Yes. We have never related it that way.

Q. Well, in addition to knowing the alignment of the [584] crankshaft, wouldn't it be helpful also to know the deflection in the webs? A. I wouldn't necessarily think so, because that's why you have spherical bearings there to take care of such things.

Q. Well, what if the webs were flexing too much as the crank rotated, what would happen? A. I don't think they ever do—

Q. Well, assuming they did, what would-- A. My experience does not indicate that they do. I have never had any knowledge of it.

Q. Well, can you assume for my purposes that you have a crankshaft rotating and the webs are flexing too much,

what would happen? A. Well, as I say, I don't think they do flex too much. Our experience does not indicate that.

Mr. Kennedy: Your Honor, would you direct the witness to answer the question?

The Court: He has answered. If it is a matter of theory, Mr. Kennedy, I assume you will have your own expert giving you his answer. Let's go on. Just cover the points you have to in cross-examination with him. And I have in mind you will have your own experts.

Q. You said you did not have any knowledge of whether Sun Shipbuilding had issued documents or regulations with [585] respect to allowable web deflections. A. I have never seen them.

Q. And the reason was because you were generally concerned with alignment, crankshaft alignment, as opposed to web deflection. A. And construction.

Q. And construction. Now, just so I understand you, is it your testimony that the wear-down of the bearings may or may not affect crankshaft alignment? A. It would depend. It depends on the manner in which they wear down. Naturally if one bearing wears more than another it will affect the alignment of the crankshaft.

The Court: That's been covered. Let's not have a repetition. That is pretty obvious.

Q. You testified as to a measurement crank web deflection of .125 thousandths of an inch; is that correct? A. I said that was what our chief engineer, the figure that he had issued.

Q. And this was while the engine was rotating under full load; is that correct? A. That is wear-down.

Q. I am talking about crank web deflection. A. Oh, yes, crank web deflection, we did that by actual measurement.

[586] Q. Was the engine in the shop? A. No, the engine was in the ship.

Q. In the ship? A. Yes.

Q. Fully loaded ship? A. It would not be fully loaded when it was new, no.

Q. So that the engine at that point is not doing the maximum work it is designed to do; is that correct? A. I would say not.

Q. You operated it— A. With a turning gear.

Q. With a turning gear or under load conditions? That is, did you operate it through the engine or the turning gear? A. Your ship, when it is being built and in the wet basin, is not under load. It doesn't get ballast in it until it goes on trial trip.

The Court: And you made that measurement in the wet basin?

The Witness: Yes, sir.

The Court: All right.

The Witness: And just for informational purposes.

Q. What information were they trying to get? A. Just the knowledge of how much they did.

Q. Were they trying to find out how much flex you could [587] safely get in a Doxford engine? A. No, I don't believe so.

Q. Is that why you said the manufacturer is not concerned with deflection, crank deflection? A. I said the manufacturer is not concerned with crank deflection so long as the—or indicated so long as he keeps within the maximum tolerance that we specify.

Q. Tolerance, meaning alignment? A. Or wear-down.

Q. Or wear-down. A. Yes.

Q. Do you recall Mr. Golten saying that in the hypothetical when we had a shaft in the alignment of— A. This hypothetical—

Q. The 32, 22, 32 hypothetical? A. 32, 42, 32.

Q. 32, 22. A. 32, 22. I would call that a dog-leg and I wouldn't call it a good condition.

Q. Do you recall Mr. Golten saying that rather than move the alignment down to the 42 he would raise up the 2 and the 4 positions? A. To make it a smooth deflection curve.

Q. Do you agree with that statement? [588] A. I would say so.

Q. Why would you do that rather than bring the No. 3 down? A. Because I didn't want to—because if you bring it down, then you are increasing, you are making it worse. The other way you are making the repair more profitable by giving yourself more bearing wear between that and the next time you have to do it. I presume now, I am only presuming that is his thinking. I can't be responsible for his thinking.

Q. Well, now, in order to move the 4 and the 3 up, the 4 and the 2 up, rather— A. What 4 and 2?

Q. Move the shaft up from 4 and move the shaft up from 2 so that the— A. You are talking about bearing numbers?

Q. Bearing numbers, that's right. A. Yes. Okay.

Q. So I understand you, it is preferable to move them up? A. Move them closer to the—

Q. And you would move them up by grinding out some babbitt in the bearing; is that what you do? A. No.

[589] Q. How would you do it? A. With this amount here, which is—well, it is 32, that's almost a 32nd of an inch, you probably would, if it was in my condition and I was asked to do that, I would burn the babbitt out and remelt the bearings and rebore them.

Now, I am answering for myself. I don't know what Golten's idea would be.

Q. I understand. You said that there was no increase or decrease in deflection of the crankshaft, and I think you meant alignment; is that correct? When you used "deflection of crankshaft," you are talking about alignment? A. Yes.

Q. When there is a change in the draft. Then you said that a sag is better with this particular ship. A. I said what?

Q. A sag is better with this particular ship. Do you recall saying that? A. I don't recall saying that, but, okay, sag in crankshaft is better than hog.

Q. With this particular ship or with any ship? A. I would say in this type of engine, with any ship. However, I think I stipulated that that was relating—the information that was related there came to me from our hull scientific department. Let me say again, I am not a hull man.

[590] Q. The sag here, referring to the sag in the crankshaft; isn't that correct? A. Yes, that is correct.

Q. Wouldn't you be interested in that rather than the hull department? A. I am interested in that, but I am also interested in the fact that—of the nature of deflections in this area. This engine is installed on the widest part of the beam on the ship and in a stiff area of a hull, as I said, which has a low ratio depth to length. And in that area you have a stiff hull girder which is not subject to too much deflection.

Q. If you have the ship in a hogged position, does it make any difference whether the crankshaft at the same time is in a hogged position or a sagged position? A. Again I would refer to the spherical bearings, which would take care of such a condition.

Q. Well, if you have a ship in a hogged position you have the front end of the ship down higher than the center; is that correct? A. That's right.

Q. The forward and aft sections are down further than the center. If you have a sag in the crankshaft, then you have the center of the crankshaft down and the ends of the crankshaft up so you have a ship which, well, if you can see [591] through the ship and the crankshaft you would have some sort of a football, wouldn't you, football-type shape? Is it advisable to operate a Doxford crankshaft in that condition? A. Again, I say that the spherical bearings takes care of misalignment created by such conditions.

Q. Would it be better for the crankshaft if at the time the ship were hogged the crankshaft was also hogged? A. I don't believe so.

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[592] • • • • •

Q. Would it be possible to have a 125 thousandths of an inch sag on this ship? A. It could if it ran long enough.

Q. If it ran long enough? A. If it wore the bearings down enough to give it to you.

Q. What is there about the construction of the ship which leads you to testify that you could not have a 125 thousandths of an inch sag but you could have a 125 thousandths of an inch—strike that. You could not have a 125 thousandths of an inch hog but you could have a 125 thousandths of an inch sag? A. Again, hull scientific, the information comes from there. That even in a light condition this ship would have sag and be minimal in character. Again, I am only relating information which has been transmitted to me throughout the years.

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[594] • • • • •

Mr. Kritzalis: If I may, your Honor. Could I ask your Honor so that I can alert my next witness, when court will resume?

The Court: We will go until one. Do you have another witness?

Mr. Kritzalis: Yes, sir. I have actually two more witnesses, but I expect to put one on today.

The Court: Who is that?

Mr. Kritzalis: The first will be Mr. William Carlson of the firm of Despard International, who prepared the adjustment. The second witness, your Honor, if I may, will be Mr. Charles Allen, and my information is to the effect that Mr. Allen is getting

out of the hospital today [595] and will be available on Monday and I don't have many questions to ask him, but I am obliged to clear up certain points—

The Court: Are you going to put in his deposition?

Mr. Kritzalis: I will not, your Honor. I would rather have his live testimony before your Honor on the points that I intend to—

* * * * *

Mr. Kritzalis: Well, your Honor, I would expect to put Mr. Carlson on and subject him to direct and cross-examination. However brief. Beyond that, I am bound not only by Mr. Allen's physical condition but also by his doctor's orders. The soonest that he can appear before your Honor is Monday morning.

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[596] * * * * *

Q. Mr. Smith, if I took a wire alignment reading of a Doxford engine, Sun Doxford engine, and found a maximum crankshaft deflection of 100 thousandths of an inch at the No. 3 main bearing, can you tell me if you know how much deflection you would expect to get at the No. 2 crank? A. I couldn't tell you. So long as it showed a smooth curve I wouldn't object to it.

[597] Q. You testified concerning this maximum web deflection of 125. Do you have any idea as to how long you can operate a crankshaft with a maximum web deflection of 125 thousandths of an inch? A. Our experience with this particular size of engine has been such that we have had little or very few crank failures.

Q. So is it your testimony that you could have a Doxford, a Sun Doxford engine with a maximum web deflection of 125 thousandths of an inch as determined from putting the crank on the turning gear and that this engine could operate indefinitely? A. I would say it is indeterminate.

Q. I hand you a document which has been marked for identification as Defendant's Exhibit K. It consists of three sheets. Have you ever seen this document before (handing)?

Mr. Kritzalis: May I see the document?

The Court: Yes.

Mr. Kritzalis: I will stipulate the document came from Hellenic's files, your Honor, but I will object to it on the grounds of relevancy if it is offered in evidence.

The Court: It hasn't been offered yet.

Q. Do you recognize this document, sir? [598] A. No, sir.

Q. Have you ever seen it before? A. No, sir.

* * * * *

Mr. Kennedy: I will offer it in evidence.

Mr. Kritzalis: I am objecting, your Honor, on the grounds of relevance.

The Court: What is the relevance?

Mr. Kennedy: Your Honor, the document consists of three sheets. All came from the main engine file for the HELLENIC SAILOR, that is File No. 49. I obtained it during the course of my discovery of plaintiff's documents.

The Court: All right. So?

Mr. Kennedy: The document relates to a Sun Doxford engine, it deals with tensile strength of webs, et cetera. The third page contains a reading of crankshaft—rather crank web allowances.

The Court: Where does it say that? Allowances?

[599] Mr. Kennedy: It contains a reading of crank webs, crank web deflections.

The Court: Made by Sun, apparently; is that right?

Mr. Kennedy: Addressed to A.B.S., referring to—

The Court: Nobody ever contended that they never measured the web deflection.

Mr. Kennedy: In this case?

The Court: No. And what am I going to get out of the fact that on September—or in September of 1960 there were some web deflection readings taken, various conditions ranging from 5 thousandths to 22 thousandths?

Mr. Kennedy: This shows the various deflections.

The Court: It shows what?

Mr. Kennedy: Your Honor, I was not permitted to examine Mr. Allen concerning this document.

The Court: Who refused you?

Mr. Kennedy: Mr. Kritzalis. It was marked for identification as Defendant's Exhibit 71 at the time of Mr. Allen's deposition.

The Court: So? Did you apply for an order to get Mr. Allen to answer the questions?

Mr. Kennedy: I did not, your Honor.

The Court: All right. So there is no complaint on that score.

[600] Mr. Kennedy: Your Honor, referring to page 2, paragraph numbered 2, the letter says, "We enclose one copy of enclosure A showing recommended deflections of crank webs when jacking over with the turning gear."

The Court: Well, that puts it in a little different way.

Mr. Kritzalis: Your Honor, we don't have the A.B.S. letter, which is the reference on the first page, the letter of September 14, 1960 of Sun Shipbuilding to A.B.S. in Piraeus. It is not a communication to or from the plaintiff shipowner and I have no information as to what the request of A.B.S. was that this letter responds to. And the witness has said he can't identify the document. He is not the author of the document.

Mr. Kennedy: Can we ask the witness if he knows the man who prepared the document?

The Court: Well, I can see your point, Mr. Kennedy. I think you have got to—I think what I ought to do is to receive it subject to connection. Now, Mr. Kritzalis says that Mr. Allen will be here as a witness, and you can ask him about it at that time, is this a copy of a letter received, and so forth. In the meantime you can certainly ask Mr. Smith about what it says here about recommended deflections.

Mr. Kritzalis: Your Honor, the witness' direct [601] testimony, if I may, had nothing to do with the measurement of web deflections.

The Court: That is really no objection.

Mr. Kritzalis: Using the turning gear.

The Court: No objection at all.

Mr. Kritzalis: Could your Honor take it subject to connection and note my objection?

The Court: Well, certainly I note it. I will receive it on this basis, Mr. Kennedy, and I will overrule the objection to this extent: It is certainly proper for you to ask the witness, and you can do it even if this wasn't in evidence, you could ask him if there were recommended deflections and if the deflections shown here were the recommended ones and so forth. And as far as the document going into evidence, as far as any kind of notice to Hellenic Lines or recommendations to Hellenic Lines, I don't think I can—well, let's leave it this way, please: Until we get a foundation for the letter, I don't think the letter itself ought to go in evidence because it might have in evidence an undue significance. But you can have it marked for identification and you can ask questions based on it to this witness as to his opinion and recommendations and so forth.

Mr. Kennedy: May I ask him if he knows the—

Mr. Kritzalis: Has my objection then been [602] sustained, your Honor?

The Court: It is sustained as of the present time.

Mr. Kritzalis: Thank you.

Q. Mr. Smith, referring to page 2 of Defendant's—

The Court: What is the date of the letter?

Mr. Kennedy: Letter dated September 14, 1960

on the letterhead of Sun Shipbuilding and Drydock Company, Chester, Pennsylvania.

The Court: All right.

Q. Mr. Smith, referring to page 2 of the letter, do you know Mr. Mylrea? A. Yes. I knew him.

Q. What type of work did he do for the company? A. He was chief engineer.

Q. Chief engineer? A. In the engineering department. I would just like to read it.

Q. You would just like to read it.

Mr. Kennedy: The witness has asked for time to read the letter, your Honor.

The Court: All right, you can just read it to yourself.

Mr. Kritzalis: Would your Honor note for his own purposes that the date shown on the diagram is April 23, 1957 [603] as opposed to the date on the letter? I have the document from Hellenic's files in my hand which shows the date clearer than does the attachment on the item which is being marked for identification.

Mr. Kennedy: It may also be 1959, if it is significant. I really don't think it is. It is a poor copy.

The Court: All right.

Q. Mr. Milrae was the chief engineer? A. Yes, he was.

Q. Was he the chief engineer in September 1960? A. If that is the date of that letter, and I know his signature.

Q. You know his signature? A. He doesn't have his signature on there.

Q. But you do know his signature? A. Yes.

Q. Referring to the third page of the exhibit, Defendant's Exhibit K— A. This is his signature.

Q. You identify his signature? A. Yes.

The Court: As far as our schedule, you had better be prepared to go with witnesses this afternoon because I have a jury trial in a securities case that is supposed to [604] start Monday. I can possibly put it off a day, but I've got to use the time. Now, you knew Mr. Allen was ill and you could not have expected Mr. Allen to show up here this afternoon. Now, who are your witnesses going to be?

Mr. Kennedy: Your Honor, I wanted to first find out what portions of Mr. Allen's testimony Mr. Kritzalis would put into the record. Because he is being very technical which he has every right to do, about his case. He has gone so far with his chief engineer. I would like to know how much of Allen's testimony would go into the record either by deposition or in person. I have started marking up Allen's deposition, but it doesn't do me any good—

The Court: He says now he is not going to put in Allen's deposition, he is going to put Allen on as a witness. I see your problem. But I mean a half day lost is a problem to me, too.

Mr. Kennedy: I recognize that, your Honor, and I apologize for it.

The Court: And I took the position at the beginning of the trial I wouldn't wait for Allen. If Allen was well during the trial, he testifies. If not, his deposition goes in. We are at more or less the end of the week and I have pretrial hearings and mo-

tions tomorrow, so I don't want to miss Allen's testimony by a cutoff day or something, but at [605] the same time isn't there some way you can get a witness down here and start—

Mr. Kennedy: Your Honor, the only witnesses that I presently plan to use as part of defendant's case is my expert.

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Q. Mr. Smith, referring to page 2 of the exhibit, specifically the paragraph numbered 2, "We enclose one copy of enclosure A showing recommended deflections of crank web [606] when jacking over with the turning gear." Were you aware of the fact that in 1960 Mr. Mylrea was issuing recommended deflections of crank webs? A. No, I was not.

Q. Do you have any idea or do you know the circumstances under which this letter and the drawing may have been issued? A. No, sir, I have never seen the document before.

Q. The subject is Sun Shipbuilding and Drydock Company Hull No. 177. Do you know what hull that refers to? A. Off the record I wouldn't know whether that was the HELLENIC SAILOR or not.

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[607] • • • • •

The Court: What is the number of the HELLENIC SAILOR's hull?

Mr. Kritzalis: To the best of my knowledge, your Honor, 177.

The Court: What is the number on that?

Mr. Kennedy: 177.

The Court: All right, that takes care of that.

Mr. Kritzalis: Your Honor, I am not altogether certain of that, but that's the best of my information.

The Court: All right, subject to correction.

Q. Again referring to the subject, the second line reads, "Sun Doxford opposed piston oil engine four-cylinder 32-inch bore times 55 inch times 40 inch stroke." Would that be the engine that was put into the HELLENIC SAILOR? A. That would be the characteristics of the engine. Whether that was the actual engine, I don't know. The engine and the hull number are different. The engine was built under a 70,000 number.

Q. Referring to the third page of the exhibit, the one [608] that has the signature you have identified as Mr. Mylrea's—

The Court: Did he identify that?

Mr. Kennedy: Yes, sir. It is on the third page.

The Court: I see.

Is this Mr. Mylrea's signature?

The Witness: Yes, your Honor.

The Court: All right. I'm sorry, Mr. Kennedy, I didn't remember that.

Q. Referring now to the third page, it reads, "Deflection of crank web when jacking over with turning gear."

Now, is that the gear that is used to turn the engine as one measures web deflection? A. Yes.

Q. Referring now to "A," it reads, "With new bearing no connecting rods installed on shaft zero-zero-5 thousandths to zero-zero-six thousandths deflection at X."

Do I take it to mean that this reading refers to the shaft just lying on the bedplate and the entablatures in the bear-

ings and without anything else connected to it? A. I would assume so.

Q. And "B," which contains the writing, "With new bearings and connecting rods installed on shaft 10 thousandths/12 thousandths deflection at X."

Do I take that to mean that when the engine— [609] they are talking about when the engine has had its bearings renewed and the rods and everything else that should be hooked onto the engine is connected? A. I would assume so.

Q. And "C" refers to, "With worn bearings and connecting rods installed on shaft 20 thousandths/22 thousandths inch deflection at X."

Mr. Kritzalis: I would like to note an objection at this point. I understood your Honor to have sustained my earlier objection. I want to know whether the questioning is intended to test this witness' knowledge or whether Mr. Kennedy is essentially trying to put the document in evidence again.

Mr. Kennedy: Your Honor, I will offer the document right now again.

The Court: Well, I think at this point Mr. Smith has identified the signature of Mr. Mylrea—

Mr. Kritzalis: There is no signature on the letter of September 14, 1960.

The Court: I think there is a sufficient basis to have this letter in simply as a document of Sun Shipbuilding. Now, the question of whether it came to the attention of Hellenic Lines, a copy was given to Hellenic Lines and so forth, that isn't established on the present record, but I am [610] going to at this point overrule Mr. Kritzalis' objection and I will re-

ceive it in evidence as being a document of Sun Shipbuilding, and you can use it in your cross-examination as you are doing.

Mr. Kritzalis: My objection is noted.

The Court: Yes.

Q. Referring again to page 3 of Defendant's Exhibit K, specifically the paragraph beginning (C), "With worn bearings and connecting rods installed on shaft 20 thousandths/22 thousandths deflection at X."

Is that referring to the condition when the engine will have been all connected up and would have been operating for sometime so as to allow some wearing of the bearings? A. I wouldn't know. I don't know the conditions under which this document was issued.

Q. Well, I am not asking you that. I am asking do you understand what is meant by the language which appears after the paragraph (C).

Mr. Kritzalis: Your Honor, has the witness answered the question?

The Court: No. The question is, is this the kind of language that he can interpret in his expertise.

A. This says with worn—

Q. With worn bearings. [611] A. And connecting rods installed on shaft 20 to 22 thousandths deflection at X.

Now, what did you ask?

Q. Does that mean that this is a deflection, that it is referring to a deflection which might be permitted or which one might get with the ship—strike that—with the engine connected up but having worn bearings? That is, bearings that have been in use for some time? A. That's what it

would indicate it was, worn bearings. However, it doesn't give you indication on here as to whether this is theoretical deflections or whether it is actual measurement. Nor does it give you the location of the crankshaft when this is supposed to exist, whether it is on top dead center or bottom dead center.

Q. Well, if you look at the crank web that appears on the exhibit, can you tell me its position? A. No, I can't, because I don't know whether your connecting rods are up here or where they are. This position here the connecting rods would be up here.

Q. Will you tell me the position of the crank, then, on then, on the diagram? A. It doesn't even say that on the diagram. It could be on top dead center, it could be bottom dead center. I don't think the actual location of the drawing gives you any [612] information as to what center it is on. It says center, center line of center connecting rod. It doesn't tell you which location.

Q. Would the location of the inscription, side conn, c-o-n-n, rod suggest to you where the side connecting rod would be? A. No, because this is parallel with this (indicating). I mean, it could be on the bottom dead center, it could be top dead center, it could be amidships. It doesn't give you any indication as to what position the crankshaft is. Then also it does not tell you whether this is theoretical or whether it is actual practice.

The Court: Well, it says recommended. It say recommended in the letter.

The Witness: Yes, but then, your Honor, is it a theoretical figure or is it an actual figure in installation of the engine?

Mr. Kritzalis: Your Honor, it also says recommended when jacking over with the turning gear. In other words, the turning gear is different, obviously, from the main engine under power.

The Court: All right. Fine.

Go ahead, Mr. Kennedy.

Mr. Kritzalis: Your Honor, this witness has a [613] physical problem, and may I ask him just while we are here to tell us if he, during the course of this examination, feels any discomfiture.

The Court: Oh, yes, of course. Any time you need a recess—

The Witness: I am perfectly comfortable.

The Court: You let us know.

The Witness: Thank you.

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[614] * * * * *

Q. Mr. Smith, you testified concerning maximum web deflections or maximum alignment deflections of 125 thousandths of an inch.

The Court: No, he didn't. Now, we have covered that and you certainly ought to know what he is talking about. He is talking about maximum weardown.

Mr. Kennedy: Your Honor, it is my understanding that the witness has also testified that the maximum alignment departure in this particular crankshaft was 125 thousandths of an inch.

The Court: That was the subject of that questioning. I did and we just don't need to go into that again. He used—he clarified his terms at the end.

He made it clear that he was talking about wear-down to be measured with the feeler gauge and the bridge gauge.

Isn't that right?

The Witness: Yes, sir.

The Court: All right.

Q. Mr. Smith, do you have an opinion as to the maximum allowable departure from alignment zero that would be recommended—

[615] Mr. Kennedy: Strike that.

Q. Do you have an opinion as to what the recommended maximum departure from alignment zero would be in a Sun Doxford shaft? A. I have already stated in evidence that I believe it could be the same as the wear-down, and I have also stated that I have witnessed crankshafts with 175 thousandths wear-down with no crank problems. However, I did qualify that by saying that we did not recommend that amount.

The Court: And you have seen alignment deflection as much as 175 thousandths?

The Witness: With no crank problems.

Q. On a continuing basis or just on a test basis? A. Well, that was just when the ship came into the yard, or during the operation of the vessel where I seen it at some other source outside of the yard.

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